

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
	<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ</i>		
<u>L9</u>	l1 and L8	21	<u>L9</u>
<u>L8</u>	(504/211 OR 504/212 OR 504/213 OR 504/214 OR 504/215 OR 504/216 OR 504/217).CCLS.	710	<u>L8</u>
<u>L7</u>	l1 with l4	0	<u>L7</u>
<u>L6</u>	l1 near3 l4	0	<u>L6</u>
<u>L5</u>	l3 and l4	0	<u>L5</u>
<u>L4</u>	iodosulfuron or foramsulfuron	69	<u>L4</u>
<u>L3</u>	l1 with L2	51	<u>L3</u>
	sul\$2onylur\$6 or sul\$2onylcarbonyldi?mino or sul\$2onylaminocarbonylamino or (sul\$2onylaminocarbonyl amino) or (sul\$2onylamino (carbonylamino or (carbonyl amino))) or ur\$6sul\$2onyl\$ or carbonyldi?minosul\$2onyl\$ or aminocarbonylaminosul\$2onyl\$ or (aminocarbonyl aminosul\$2onyl\$) or (amino (carbonylaminosul\$2onyl\$ or (carbonyl aminosul\$2onyl\$))) or \$2carbamoysul\$2amoyl or (\$2carbamoyl \$2sul\$2amoyl) or sul\$2onyl near (urea\$1 or ureido or ureylene or uramino or carbonyldi?mino or aminocarbonylamino or (aminocarbonyl amino) or (amino (carbonylamino or (carbonyl amino))) )	9999	<u>L2</u>
<u>L1</u>	phosphonium or sulfonium or sulphonium	34811	<u>L1</u>

END OF SEARCH HISTORY

**WEST**

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L3: Entry 35 of 51

File: EPAB

Jul 5, 2001

PUB-NO: DE019963383A1

DOCUMENT-IDENTIFIER: DE 19963383 A1

TITLE: Stable herbicide or plant growth regulator formulations, especially emulsifiable concentrates, contain new or known phosphonium or sulfonium salt derivatives of sulfonyl urea compounds

PUBN-DATE: July 5, 2001

## INVENTOR-INFORMATION:

NAME

COUNTRY

SCHNABEL, GERHARD

DE

HAASE, DETLEV

DE

MAIER, THOMAS

DE

DE, UNA JULIO MARTINEZ

DE

WUERTZ, JOCHEN

DE

## ASSIGNEE-INFORMATION:

NAME

COUNTRY

AVENTIS CROPS SCIENCE GMBH

DE

*App 3*

APPL-NO: DE19963383

APPL-DATE: December 28, 1999

PRIORITY-DATA: DE19963383A (December 28, 1999)

INT-CL (IPC): A01 N 47/36

EUR-CL (EPC): A01N025/30; A01N047/36, A01N047/36

## ABSTRACT:

CHG DATE=20020202 STATUS=N>A new formulation comprises: (a) at least one phosphonium or sulfonium salt (I) of a sulfonyl urea, where the phosphonium or sulfonium cation contains at least one substituent other than H; and (b) conventional auxiliaries and additives. Independent claims are included for: (i) new sulfonylurea salts of formula (I'); Ra = substituted aliphatic, aromatic or heterocyclic residue or an electron withdrawing group such as a substituted sulfonamide group; Rb = heterocyclyl, preferably containing N, especially containing 2 or 3 ring N; R1 = H or 1-10C hydrocarbyl, e.g. 1-6C alkyl; M<+> = quaternary sulfonium or tertiary sulfonium ion; (ii) the use of sulfonium or phosphonium compounds of formula (XVIII) for the preparation of an agrochemical formulation. w, x, y, z = 0-50; R = optionally substituted 8-40C hydrocarbyl; EO = ethoxy unit PO = propoxy unit; M'<+> = sulfonium or phosphonium.

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L3: Entry 38 of 51

File: DWPI

Oct 22, 2002

DERWENT-ACC-NO: 2000-514753

DERWENT-WEEK: 200301

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Stable herbicide or plant growth regulator formulations, especially emulsifiable concentrates, contain new or known phosphonium or sulfonium salt derivatives of sulfonyl urea compounds

INVENTOR: HAASE, D; MAIER, T ; MARTINEZ DE UNA, J ; SCHNABEL, G ; WUERTZ, J ; DE UNA, J M

PATENT-ASSIGNEE: AVENTIS CROPSCIENCE GMBH (AVET)

PRIORITY-DATA: 1999DE-1063383 (December 28, 1999), 1999DE-1003064 (January 27, 1999)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 2002535345 W	October 22, 2002		058	A01N047/36
WO 200044227 A1	August 3, 2000	G	062	A01N047/38
AU 200027981 A	August 18, 2000		000	A01N047/38
DE 19963383 A1	July 5, 2001		000	A01N047/36
BR 200007772 A	October 30, 2001		000	A01N047/38
EP 1158858 A1	December 5, 2001	G	000	A01N047/38

DESIGNATED-STATES: AE AL AM AU AZ BA BB BG BR BY CA CN CR CU CZ DM EE GD GE HR HU ID IL IN IS JP KG KP KR KZ LC LK LR LT LV MA MD MG MK MN MX NO NZ PL RO RU SG SI SK TJ TM TR TT UA US UZ VN YU ZA AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP2002535345W	January 22, 2000	2000JP-0595540	
JP2002535345W	January 22, 2000	2000WO-EP00469	
JP2002535345W		WO 200044227	Based on
WO 200044227A1	January 22, 2000	2000WO-EP00469	
AU 200027981A	January 22, 2000	2000AU-0027981	
AU 200027981A		WO 200044227	Based on
DE 19963383A1	December 28, 1999	1999DE-1063383	
BR 200007772A	January 22, 2000	2000BR-0007772	
BR 200007772A	January 22, 2000	2000WO-EP00469	
BR 200007772A		WO 200044227	Based on
EP 1158858A1	January 22, 2000	2000EP-0906217	
EP 1158858A1	January 22, 2000	2000WO-EP00469	
EP 1158858A1		WO 200044227	Based on

INT-CL (IPC): A01 N 25/30; A01 N 47/34; A01 N 47/36; A01 N 47/38; C07 D 239/52; C07

D 251/46; C11 D 1/60

RELATED-ACC-NO: 2000-514752

ABSTRACTED-PUB-NO: WO 200044227A

BASIC-ABSTRACT:

NOVELTY - A new formulation comprises:

- (a) at least one phosphonium or sulfonium salt (I) of a sulfonyl urea, where the phosphonium or sulfonium cation contains at least one substituent other than H; and
- (b) conventional auxiliaries and additives.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

- (i) new sulfonylurea salts of formula (I');

Ra = substituted aliphatic, aromatic or heterocyclic residue or an electron withdrawing group such as a substituted sulfonamide group;

Rb = heterocyclyl, preferably containing N, especially containing 2 or 3 ring N;

R1 = H or 1-10C hydrocarbyl, e.g. 1-6C alkyl;

M+ = quaternary sulfonium or tertiary sulfonium ion;

- (ii) the use of sulfonium or phosphonium compounds of formula (XVIII) for the preparation of an agrochemical formulation.

w, x, y, z = 0-50;

R = optionally substituted 8-40C hydrocarbyl;

EO = ethoxy unit

PO = propoxy unit;

M'+ = sulfonium or phosphonium.

ACTIVITY - Herbicide; plant growth regulator.

MECHANISM OF ACTION - None given.

USE - (I)/(I') are herbicides and plant growth regulators (claimed). As herbicides, they are useful for the pre- or post-emergence control of a broad spectrum of mono- and dicotyledonous weeds, including perennial 'problem' weeds, and can be used for selective weed control in crops such as wheat, barley, rye, rice, maize, sugar-beet, cotton and soya. Typically they are useful for controlling Echinochloa, Sagittaria, Alisma, Eleocharis, Scirpus and Cyperus. As plant growth regulators they may be used to influence the metabolism of plants, control the plant contents, facilitate harvesting (e.g. by desiccation or growth inhibition) or inhibit vegetative growth (e.g. to prevent lodging). (XVIII) are useful as auxiliaries in agrochemical formulations or in the synthesis of salts of agrochemical active agents with at least one acid proton.

ADVANTAGE - The formulations have high chemical stability and may have a high active agent content (e.g. up to 70 wt. %). In particular, in emulsifiable concentrate form, they have higher stability and may have a higher active agent content than corresponding formulations containing the sulfonyl ureas in neutral or metal salt form. The formulations are inexpensive to prepare and 'user-friendly', and are easily formed into combination preparations by dissolving the required combination partner in the organic solvent system.

ABSTRACTED-PUB-NO: WO 200044227A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: C01 C02

CPI-CODES: C05-B01P; C07-D04; C07-D12; C07-D13; C14-U01; C14-V01; C14-V03;

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**Search Results - Record(s) 1 through 10 of 21 returned.**☐ 1. Document ID: US 20020042345 A1

L9: Entry 1 of 21

File: PGPB

Apr 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020042345

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020042345 A1

TITLE: Combination of crop protection agents with hydrogen bond-forming polymers

PUBLICATION-DATE: April 11, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kocur, Jean	Hofheim		DE	
Frisch, Gerhard	Wehrheim		DE	
Wurtz, Jochen	Bingen am Rhein		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	
Schnabel, Gerhard	Elsenfeld		DE	

US-CL-CURRENT: 504/211; 504/358, 514/772, 514/964

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☒ 2. Document ID: US 6451738 B1

L9: Entry 2 of 21

File: USPT

Sep 17, 2002

US-PAT-NO: 6451738

DOCUMENT-IDENTIFIER: US 6451738 B1

TITLE: Substituted thienyl(Amino)-sulphonyl(thio)ureas as herbicides

DATE-ISSUED: September 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gesing; Ernst Rudolf F.	Erkrath			DE
Jansen; Johannes Rudolf	Monheim			DE
Muller; Klaus-Helmut	Dusseldorf			DE
Philipp; Ulrich	Koln			DE
Dollinger; Markus	Overland Park	KS		

US-CL-CURRENT: [504/215](#); [544/300](#), [544/310](#), [544/318](#), [544/320](#), [544/324](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☒ 3. Document ID: US 6451737 B1

L9: Entry 3 of 21

File: USPT

Sep 17, 2002

US-PAT-NO: 6451737

DOCUMENT-IDENTIFIER: US 6451737 B1

TITLE: Substituted aryl sulphonyl (thio) ureas as herbicides

DATE-ISSUED: September 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gesing; Ernst Rudolf F.	Erkrath			DE
Kirsten; Rolf	Monheim			DE
Kluth; Joachim	Langenfeld			DE
Muller; Klaus-Helmut	Dusseldorf			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Jansen; Johannes Rudolf	Monheim			DE
Philipp; Ulrich	Koln			DE
Riebel; Hans-Jochem	Wuppertal			DE
Schallner; Otto	Monheim			DE
Dollinger; Markus	Knox	KS		
Santel; Hans-Joachim	Leverkusen			DE

US-CL-CURRENT: [504/212](#); [504/213](#), [544/197](#), [544/198](#), [544/206](#), [544/207](#), [544/208](#),  
[544/209](#), [544/211](#), [544/212](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 4. Document ID: US 6413911 B1

L9: Entry 4 of 21

File: USPT

Jul 2, 2002

US-PAT-NO: 6413911

DOCUMENT-IDENTIFIER: US 6413911 B1

TITLE: Herbicidal sulfonylureas, their preparation and use

DATE-ISSUED: July 2, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mayer; Horst	Ludwigshafen			DE
Hamprecht; Gerhard	Weinheim			DE
Westphalen; Karl-Otto	Speyer			DE
Gerber; Matthias	Limburgerhof			DE
Walter; Helmut	Obrigheim			DE

US-CL-CURRENT: 504/214; 544/211

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☐ 5. Document ID: US 6303541 B1

L9: Entry 5 of 21

File: USPT

Oct 16, 2001

US-PAT-NO: 6303541

DOCUMENT-IDENTIFIER: US 6303541 B1

TITLE: Substituted thienyl(amino)sulphonyl(thio)ureas as herbicides

DATE-ISSUED: October 16, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gesing; Ernst Rudolf F.	Erkrath			DE
Jansen; Johannes Rudolf	Monheim			DE
Muller; Klaus-Helmut	Dusseldorf			DE
Philipp; Ulrich	Koln			DE
Dollinger; Markus	Overland Park	KS		

US-CL-CURRENT: 504/213; 544/198, 544/207, 544/209, 544/212

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☐ 6. Document ID: US 6043196 A

L9: Entry 6 of 21

File: USPT

Mar 28, 2000

US-PAT-NO: 6043196

DOCUMENT-IDENTIFIER: US 6043196 A

TITLE: Herbicidal sulfonylureas, their preparation and use

DATE-ISSUED: March 28, 2000

## INVENTOR-INFORMATION:



NAME	CITY	STATE	ZIP CODE	COUNTRY
Mayer; Horst	Ludwigshafen			DE
Hamprecht; Gerhard	Weinheim			DE
Westphalen; Karl-Otto	Speyer			DE
Gerber; Matthias	Limburgerhof			DE
Walter; Helmut	Obrigheim			DE

US-CL-CURRENT: 504/212; 544/211

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 7. Document ID: US 5597779 A

L9: Entry 7 of 21

File: USPT

Jan 28, 1997

US-PAT-NO: 5597779

DOCUMENT-IDENTIFIER: US 5597779 A

TITLE: Sulfonylureas

DATE-ISSUED: January 28, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meyer; Willy	Riehen			CH

US-CL-CURRENT: 504/215; 544/321, 544/323, 544/332

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 8. Document ID: US 5591694 A

L9: Entry 8 of 21

File: USPT

Jan 7, 1997

US-PAT-NO: 5591694

DOCUMENT-IDENTIFIER: US 5591694 A

TITLE: Herbicidal sulfonylureas

DATE-ISSUED: January 7, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hamprecht; Gerhard	Weinheim			DE
Mayer; Horst	Ludwigshafen			DE
Westphalen; Karl-Otto	Speyer			DE
Walter; Helmut	Obrigheim			DE
Gerber; Matthias	Mutterstadt			DE
Kardorff; Uwe	Mannheim			DE

US-CL-CURRENT: 504/214; 544/321

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 9. Document ID: US 5552368 A

L9: Entry 9 of 21

File: USPT

Sep 3, 1996

US-PAT-NO: 5552368

DOCUMENT-IDENTIFIER: US 5552368 A

TITLE: Sulfonylureas

DATE-ISSUED: September 3, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meyer; Willy	Riehen			CH

US-CL-CURRENT: 504/211; 548/262.6, 548/263.8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 10. Document ID: US 5532203 A

L9: Entry 10 of 21

File: USPT

Jul 2, 1996

US-PAT-NO: 5532203

DOCUMENT-IDENTIFIER: US 5532203 A

TITLE: Selective safened herbicidal composition

DATE-ISSUED: July 2, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fory; Werner	Riehen			CH
Kerber; Elmar	Gorwihl			DE
Hudetz; Manfred	Rheinfelden			CH

US-CL-CURRENT: 504/105; 504/106, 504/107, 504/108, 504/109, 504/110, 504/111,  
504/112, 504/215, 540/601, 544/123, 544/320, 544/321, 544/63, 544/96

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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L9: Entry 11 of 21

File: USPT

Apr 18, 1995

US-PAT-NO: 5407900

DOCUMENT-IDENTIFIER: US 5407900 A

TITLE: Pyridylsulfonyleureas

DATE-ISSUED: April 18, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fory; Werner	Riehen			CH
Schurter; Rolf	Binningen			CH

US-CL-CURRENT: [504/213](#); [544/212](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw Desc	Image										

☐ 12. Document ID: US 5369083 A

L9: Entry 12 of 21

File: USPT

Nov 29, 1994

US-PAT-NO: 5369083

DOCUMENT-IDENTIFIER: US 5369083 A

TITLE: Sulfonyleureas

DATE-ISSUED: November 29, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schurter; Rolf	Binningen			CH
Fory; Werner	Riehen			CH

US-CL-CURRENT: [504/215](#); [544/320](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw Desc	Image										

☐ 13. Document ID: US 5342823 A

L9: Entry 13 of 21

File: USPT

Aug 30, 1994

US-PAT-NO: 5342823

DOCUMENT-IDENTIFIER: US 5342823 A

TITLE: Sulfonylureas

DATE-ISSUED: August 30, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kuhlmeyer; Rainer	Ihringen			DE
Topfl; Werner	Dornach			CH
Fory; Werner	Riehen			CH

US-CL-CURRENT: 504/215; 544/320, 544/321, 544/324, 544/331

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw Desc	Image										

☐ 14. Document ID: US 5286709 A

L9: Entry 14 of 21

File: USPT

Feb 15, 1994

US-PAT-NO: 5286709

DOCUMENT-IDENTIFIER: US 5286709 A

TITLE: Sulfonylureas

DATE-ISSUED: February 15, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meyer; Willy	Riehen			CH

US-CL-CURRENT: 504/215; 544/311, 544/312, 544/317, 544/319, 544/327, 544/329

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☒ 15. Document ID: US 5276007 A

L9: Entry 15 of 21

File: USPT

Jan 4, 1994

US-PAT-NO: 5276007

DOCUMENT-IDENTIFIER: US 5276007 A

TITLE: Herbicidal sulfonylureas

DATE-ISSUED: January 4, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hamprecht; Gerhard	Weinheim			DE
Mayer; Horst	Ludwigshafen			DE
Westphalen; Karl-Otto	Speyer			DE
Wuerzer; Bruno	Otterstadt			DE
Gerber; Matthias	Mutterstadt			DE
Grossmann; Klaus	Limburgerhof			DE
Rademacher; Wilhelm	Limburgerhof			DE

US-CL-CURRENT: 504/214; 504/215, 504/219, 504/225, 504/242, 504/243, 540/601,  
544/123, 544/321

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
Draw Desc	Image									

☐ 16. Document ID: US 5209771 A

L9: Entry 16 of 21

File: USPT

May 11, 1993

US-PAT-NO: 5209771

DOCUMENT-IDENTIFIER: US 5209771 A

TITLE: Sulfonylureas

DATE-ISSUED: May 11, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meyer; Willy	Riehen			CH

US-CL-CURRENT: 504/178; 504/181, 504/213, 504/215, 504/216, 544/207, 544/209,  
544/212

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
Draw Desc	Image									

☐ 17. Document ID: US 5188657 A

L9: Entry 17 of 21

File: USPT

Feb 23, 1993

US-PAT-NO: 5188657

DOCUMENT-IDENTIFIER: US 5188657 A

TITLE: Herbicidal sulfonylureas and their use

DATE-ISSUED: February 23, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hamprecht; Gerhard	Weinheim			DE
Mayer; Horst	Ludwigshafen			DE
Westphalen; Karl-Otto	Speyer			DE
Walter; Helmut	Obrigheim			DE
Gerber; Matthias	Mutterstadt			DE
Grossmann; Klaus	Limburgerhof			DE
Rademacher; Wilhelm	Limburgerhof			DE

US-CL-CURRENT: 504/212; 504/168, 504/178, 504/185, 504/191, 504/213, 540/598,  
544/113, 544/208, 544/209, 544/211, 544/212

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 18. Document ID: US 4764207 A

L9: Entry 18 of 21

File: USPT

Aug 16, 1988

US-PAT-NO: 4764207

DOCUMENT-IDENTIFIER: US 4764207 A

TITLE: Herbicidal sulfonamides

DATE-ISSUED: August 16, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Christensen; Joel R.	Wilmington	DE		
Liang; Paul H.	Wilmington	DE		
Thompson; Mark E.	Wilmington	DE		

US-CL-CURRENT: 504/212; 504/213, 504/214, 504/215, 544/209, 544/212, 544/3, 544/60,  
546/210, 546/272.4, 546/276.1, 546/281.4, 548/262.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWMC
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☐ 19. Document ID: US 4685955 A

L9: Entry 19 of 21

File: USPT

Aug 11, 1987

US-PAT-NO: 4685955

DOCUMENT-IDENTIFIER: US 4685955 A

TITLE: Herbicidal sulfonamides

DATE-ISSUED: August 11, 1987

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Christensen; Joel R.	Wilmington	DE		
Liang; Paul H.	Wilmington	DE		
Thompson; Mark E.	Wilmington	DE		

US-CL-CURRENT: 504/214; 504/211, 504/212, 504/213, 504/215, 544/209, 544/212,  
544/253, 544/278, 544/3, 544/320, 544/321 , 544/323, 544/324, 544/331, 544/332,  
544/60

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 20. Document ID: US 4591376 A

L9: Entry 20 of 21

File: USPT

May 27, 1986

US-PAT-NO: 4591376

DOCUMENT-IDENTIFIER: US 4591376 A

TITLE: 1,2,3-thiadiazol-3-in-5-ylidene-urea derivatives, methods for the production of these compounds as well as compositions containing the same and having growth-regulatory and defoliating activity

DATE-ISSUED: May 27, 1986

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Krahmer; Hansjorg	Berlin			DE
Rusch; Reinhart	Berlin			DE
Kruger; Hans-Rudolf	Berlin			DE
Sjut; Volkert	Berlin			DE

US-CL-CURRENT: 504/167; 504/170, 504/185, 504/217, 504/225, 504/249, 504/261,  
548/127

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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Terms	Documents
11 and L8	21

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L9: Entry 21 of 21

File: USPT

Nov 27, 1984

US-PAT-NO: 4484939

DOCUMENT-IDENTIFIER: US 4484939 A

TITLE: Herbicidal sulfonamide inner salts

DATE-ISSUED: November 27, 1984

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tseng; Chi-Ping	Wilmington	DE		

US-CL-CURRENT: 504/215; 504/212, 504/213, 504/214, 544/321, 544/332

Full	Title	CLS.21	REF.21	SEQ.21	ATT.21

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Terms	Documents
11 and L8	21

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L9: Entry 2 of 21

File: USPT

Sep 17, 2002

DOCUMENT-IDENTIFIER: US 6451738 B1

TITLE: Substituted thienyl(Amino)-sulphonyl(thio)ureas as herbicides

Detailed Description Text (17):

The invention furthermore preferably provides sodium, potassium, magnesium, calcium, ammonium, C.sub.1 -C.sub.4 -alkyl-ammonium, di-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tetra-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-sulphonium, C.sub.5 - or C.sub.6 -cycloalkyl-ammonium and di-(C.sub.1 -C.sub.2 -alkyl)-benzyl-ammonium salts of compounds of the formula (I) in which A, E, Q, R.sup.1, R.sup.2, R.sup.3, R.sup.4, R.sup.5 and R.sup.6 are each preferably as defined above.

Current US Original Classification (1):504/215

## CLAIMS:

2. The compound of claim 1, wherein the compound is a salt, said salt being selected from the group consisting of the sodium, potassium, magnesium, calcium, ammonium, C.sub.1 -C.sub.4 -alkyl-ammonium, di-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tetra-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-sulphonium, C.sub.5 - or C.sub.6 -cycloalkyl-ammonium and di-(C.sub.1 -C.sub.2 -alkyl)-benzyl-ammonium salts of said compound.

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L9: Entry 3 of 21

File: USPT

Sep 17, 2002

DOCUMENT-IDENTIFIER: US 6451737 B1

TITLE: Substituted aryl sulphonyl (thio) ureas as herbicides

Brief Summary Text (19):

The invention furthermore preferably provides sodium, potassium, magnesium, calcium, ammonium, C.sub.1 -C.sub.4 -alkyl-ammonium, di-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tetra-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-sulphonium, C.sub.5 - or C.sub.6 -cycloalkyl-ammonium and di-(C.sub.1 -C.sub.2 -alkyl)-benzyl-ammonium salts of compounds of the formula (I) in which A, Q, R.sup.1, R.sup.2, R.sup.3, R.sup.4 and R.sup.5 are each preferably as defined above.

Current US Original Classification (1):

504/212

Current US Cross Reference Classification (1):

504/213

## CLAIMS:

1. A compound of the formula (I) ##STR52##

wherein: A is nitrogen, Q is oxygen, R.sup.1 is selected from the group consisting of hydrogen, halogen, C.sub.1 -C.sub.4 -alkyl, C.sub.1 -C.sub.4 -dialkylamino and optionally halogen-substituted C.sub.1 -C.sub.4 -alkoxy, R.sup.2 is selected from the group consisting of C.sub.1 -C.sub.4 -alkyl, C.sub.1 -C.sub.4 -alkylthio, C.sub.1 -C.sub.4 -dialkylamino and optionally halogen-substituted C.sub.1 -C.sub.4 -alkoxy, R.sup.3 is hydrogen, R.sup.4 is selected from the group consisting of optionally halogen-substituted C.sub.1 -C.sub.6 -alkyl, optionally halogen-substituted C.sub.1 -C.sub.6 -alkoxy and cycloalkyloxy having 3 to 6 carbon atoms in the cycloalkyl group, R.sup.5 is optionally halogen-substituted C.sub.1 -C.sub.6 -alkyl or represents a C.sub.3 -C.sub.6 -cycloalkyl, or

the sodium, potassium, magnesium, calcium, ammonium, C.sub.1 -C.sub.4 -alkyl-ammonium, di-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tetra-(C.sub.1 -C.sub.4 -alkyl)-ammonium, tri-(C.sub.1 -C.sub.4 -alkyl)-sulphonium, C.sub.5 - or C.sub.6 -cycloalkyl-ammonium and di-(C.sub.1 -C.sub.2 -alkyl)-benzyl-ammonium salts of compounds of the formula (I).

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L9: Entry 4 of 21

File: USPT

Jul 2, 2002

DOCUMENT-IDENTIFIER: US 6413911 B1

TITLE: Herbicidal sulfonylureas, their preparation and use

Brief Summary Text (58):

Suitable bases are, for example, alkali metal or alkaline earth metal hydroxides, hydrides, oxides or alkoxides such as sodium, potassium and lithium hydroxide, sodium methoxide, ethoxide and tert-butoxide, sodium and calcium hydride and calcium oxide. Salts of transition metals, preferably manganese, copper, zinc and iron salts and also the ammonium salts which can carry one to three C.sub.1 -C.sub.4 -alkyl or hydroxy-C.sub.1 -C.sub.4 -alkyl substituents and/or a phenyl or benzyl substituent, preferably diisopropylammonium, tetramethylammonium, tetrabutylammonium, trimethylbenzylammonium and trimethyl(2-hydroxyethyl)ammonium salts, the phosphonium salts, the sulfonium salts, preferably tri-(C.sub.1 -C.sub.4)-alkylsulfonium salts, and the sulfoxonium salts, preferably tri-(C.sub.1 -C.sub.4)-alkylsulfoxonium salts can also be employed as basic salts.

Current US Original Classification (1):504/214

**WEST**

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L9: Entry 8 of 21

File: USPT

Jan 7, 1997

DOCUMENT-IDENTIFIER: US 5591694 A

TITLE: Herbicidal sulfonylureas

Brief Summary Text (163):

Examples of suitable bases are alkali metal and alkaline earth metal hydroxides, hydrides, oxides or alcoholates, such as sodium, potassium and lithium hydroxide, sodium methylate, ethylate and tert-butylate, sodium and calcium hydride and calcium oxide. Salts having other counter-ions, such as ammonium, tetraalkylammonium, benzyltrialkylammonium, phosphonium, sulfonium and the like, can be prepared therefrom by cation exchange.

Brief Summary Text (166):

Suitable salts of the compounds of the formula I are agriculturally useful salts, for example alkali metal salts, such as the potassium or sodium salt, alkaline earth metal salts, such as the calcium, magnesium or barium salt, manganese, copper, zinc or iron salts and ammonium, phosphonium, sulfonium or sulfoxonium salts, for example ammonium salts, tetraalkylammonium salts, benzyltrialkylammonium salts, trialkylsulfonium salts or trialkylsulfoxonium salts.

Current US Original Classification (1):504/214

**WEST**

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L9: Entry 15 of 21

File: USPT

Jan 4, 1994

DOCUMENT-IDENTIFIER: US 5276007 A  
TITLE: Herbicidal sulfonylureas

Detailed Description Text (111):

Suitable salts of the compounds of the formula I are salts which can be used in agriculture, for example alkali metal salts such as the potassium or sodium salt, alkaline earth metal salts such as the calcium, magnesium or barium salt, manganese, copper, zinc or iron salts, and ammonium, phosphonium, sulfonium or sulfoxonium salts, for example ammonium salts, tetraalkylammonium salts, benzyltrialkylammonium salts, trialkylsulfonium salts or trialkylsulfoxonium salts.

Current US Original Classification (1):504/214Current US Cross Reference Classification (1):504/215

**WEST**

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L9: Entry 17 of 21

File: USPT

Feb 23, 1993

DOCUMENT-IDENTIFIER: US 5188657 A

TITLE: Herbicidal sulfonylureas and their use

Brief Summary Text (106):

Suitable salts of the compounds of the formula I are agriculturally useful salts, for example alkali metal salts, such as the potassium or sodium salt, alkaline earth metal salts, such as calcium, magnesium or barium salt, manganese salts, copper salts, zinc salts or iron salts, and ammonium, phosphonium, sulfonium or sulfoxonium salts, for example ammonium salts, tetraalkylammonium salts, benzyltrialkylammonium salts, trialkylsulfonium salts or trialkylsulfoxonium salts.

Current US Original Classification (1):504/212Current US Cross Reference Classification (5):504/213

**WEST****End of Result Set**

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L9: Entry 21 of 21

File: USPT

Nov 27, 1984

DOCUMENT-IDENTIFIER: US 4484939 A

TITLE: Herbicidal sulfonamide inner salts

Detailed Description Paragraph Table (31):

Wettable Powder

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 80%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt sodium  
alkylnaphthalenesulfonate 2% sodium ligninsulfonate 2% synthetic amorphous silica 3%  
kaolinite 13%

Detailed Description Paragraph Table (32):

Wettable Powder

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 50%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt sodium  
alkylnaphthalenesulfonate 2% low viscosity methyl cellulose 2% diatomaceous earth  
46%

Detailed Description Paragraph Table (35):

Oil Suspension

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 25%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt  
polyoxyethylene sorbital hexaoleate 5% highly aliphatic hydrocarbon oil 70%

Detailed Description Paragraph Table (37):

Low Strength Granule

N--[(4,6-dimethylpyrimidin-2-yl)aminocarbonyl]-2- 1%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt  
N,N--dimethylformamide 9% attapulgit granules 90% U.S.S. 20-40 sieve)

Detailed Description Paragraph Table (38):

Aqueous Suspension

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 40%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt polyacrylic  
acid thickener 0.3% dodecylphenol polyethylene glycol ether 0.5% disodium phosphate  
1% monosodium phosphate 0.5% polyvinyl alcohol 1.0% water 56.7%

Detailed Description Paragraph Table (39):

Low Strength Granule

2-[[[(4-methoxy-6-methylpyrimidin-2-yl)aminocarbonyl]- 0.1% aminosulfonyl]benzoic  
acid methyl ester, dimethyl- sulfonium inner salt attapulgit granules 99.9% (U.S.S.  
20-40 mesh)

Detailed Description Paragraph Table (40):Granule

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 80%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt wetting  
agent 1% crude ligninsulfonate salt (containing 10% 5-20% of the natural sugars)  
attapulgit clay 9%

Detailed Description Paragraph Table (41):High Strength Concentrate

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 99%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt silica  
aerogel 0.5% synthetic amorphous silica 0.5%

Detailed Description Paragraph Table (42):Wettable Powder

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 90%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt dioctyl  
sodium sulfosuccinate 0.1% synthetic fine silica 9.9%

Detailed Description Paragraph Table (43):Wettable Powder

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 40%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt sodium  
ligninsulfonate 20% montmorillonite clay 40%

Detailed Description Paragraph Table (44):Oil Suspension

N--[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-2- 35%  
dimethylaminosulfonylbenzenesulfonamide, dimethyl- sulfonium inner salt blend of  
polyalcohol carboxylic 6% esters and oil soluble petroleum sulfonates xylene 59%

Detailed Description Paragraph Table (45):Dust

2-[[[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]- 10% aminosulfonyl]benzoic acid  
methyl ester, dimethyl- sulfonium inner salt attapulgit 10% Pyrophyllite 80%

Current US Original Classification (1):504/215Current US Cross Reference Classification (1):504/212Current US Cross Reference Classification (2):504/213Current US Cross Reference Classification (3):504/214



<u>Set</u> <u>Name</u> side by side	<u>Query</u>	<u>Hit</u> <u>Count</u>	<u>Set Name</u> result set
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<u>L17</u>	l3 and salts	74	<u>L17</u>
<u>L16</u>	L1 not l14	56	<u>L16</u>
<i>DB=USPT; PLUR=YES; OP=ADJ</i>			
<u>L15</u>	l1 not L14	0	<u>L15</u>
<u>L14</u>	L1	33	<u>L14</u>
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<u>L13</u>	l1 and pd<19951231	89	<u>L13</u>
<u>L12</u>	l1 and py<1995	89	<u>L12</u>
<u>L11</u>	l1 not L10	54	<u>L11</u>
<u>L10</u>	sulfonylurea\$1	4216	<u>L10</u>
<u>L9</u>	l1 and py<2000	89	<u>L9</u>
<u>L8</u>	l1 and L7	2	<u>L8</u>
<u>L7</u>	trimethylsulfonium or trimethylsulphonium	1203	<u>L7</u>
<u>L6</u>	l1 and L5	8	<u>L6</u>
<u>L5</u>	sulfonium or sulphonium	15301	<u>L5</u>
<u>L4</u>	l1 not L3	3	<u>L4</u>
<u>L3</u>	iodosulfuron	86	<u>L3</u>
<u>L2</u>	glyphosate	3956	<u>L2</u>
<u>L1</u>	Iodosulfuron or iodosulphuron or ( iodo adj4 methoxy adj2 methyl adj4 triazin\$2 adj3 ((ureidosulfonylbenzo\$3 or ureidosulphonylbenzo\$3 or ((ureidosulfonyl or ureidosulphonyl) adj benzo\$3)) or (aminocarbonylamino sulfonylbenzo\$3 or (amino carbonyl amino adj (sulfonyl or sulphonyl) adj benzo\$3))) ) or (iodo adj4 methoxy adj2 methyl adj4 triazin\$2 adj3 ( sul\$2onylur\$6 or sul\$2onylcarbonyldi?mino or sul\$2onylaminocarbonylamino or (sul\$2onylaminocarbonyl amino) or (sul\$2onylamino (carbonylamino or (carbonyl amino))) or ur\$6sul\$2onyl\$ or carbonyldi?minosul\$2onyl\$ or aminocarbonylamino sul\$2onyl\$ or (aminocarbonyl aminosul\$2onyl\$) or (amino (carbonylamino sul\$2onyl\$ or (carbonyl aminosul\$2onyl\$))) or \$2carbamoysul\$2amoyl or (\$2carbamoysul\$2amoyl) or sul\$2onyl near (urea\$1 or ureido or ureylene or uramino or carbonyldi?mino or aminocarbonylamino or (aminocarbonyl amino) or (amino (carbonylamino or (carbonyl amino)))) ) adj benzo\$3 )	89	<u>L1</u>

END OF SEARCH HISTORY

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**Search Results - Record(s) 1 through 8 of 8 returned.**☐ 1. Document ID: US 20020115569 A1

L6: Entry 1 of 8

File: PGPB

Aug 22, 2002

PGPUB-DOCUMENT-NUMBER: 20020115569  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020115569 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: August 22, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Schnabel, Gerhard	Elsenfeld		DE	
Kocur, Jean	Hofheim		DE	
Krause, Hans-Peter	Hofheim		DE	
Una, Julio Martinez de	Liederbach		DE	
Huff, Hans Philipp	Eppstein		DE	
Bickers, Udo	Weitmarschen		DE	

US-CL-CURRENT: 504/310; 504/358

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	IMC
Draw Desc	Image										

☐ 2. Document ID: US 20020055436 A1

L6: Entry 2 of 8

File: PGPB

May 9, 2002

PGPUB-DOCUMENT-NUMBER: 20020055436  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020055436 A1

TITLE: Combinations of crop protection agents with organic or inorganic carrier materials

PUBLICATION-DATE: May 9, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Krause, Hans-Peter	Hofheim		DE	
Schnabel, Gerhard	Elsenfeld		DE	
Frisch, Gerhard	Wehrheim		DE	
Wurtz, Jochen	Bingen am Rhein		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Auler, Thomas	Bad Soden		DE	
Melendez, Alvaro	Schwalbach		DE	
Haase, Detlev	Frankfurt		DE	

US-CL-CURRENT: 504/118; 504/103, 504/359, 504/360, 504/361, 514/772, 514/949,  
514/950, 514/962, 514/963

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC
Draw Desc	Image										

☐ 3. Document ID: US 20020055435 A1

L6: Entry 3 of 8

File: PGPB

May 9, 2002

PGPUB-DOCUMENT-NUMBER: 20020055435  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020055435 A1

TITLE: Herbicidal mixtures

PUBLICATION-DATE: May 9, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Baltruschat, Helmut Siegfried	Schweppenhausen		DE	
Brandt, Astrid	Mainz		DE	

US-CL-CURRENT: 504/103; 504/104, 504/105, 504/106, 504/107, 504/108, 504/109,  
504/110, 504/111, 504/112

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC
Draw Desc	Image										

☐ 4. Document ID: US 20020042345 A1

L6: Entry 4 of 8

File: PGPB

Apr 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020042345  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020042345 A1

TITLE: Combination of crop protection agents with hydrogen bond-forming polymers

PUBLICATION-DATE: April 11, 2002

INVENTOR-INFORMATION:

0

NAME	CITY	STATE	COUNTRY	RULE-47
Kocur, Jean	Hofheim		DE	
Frisch, Gerhard	Wehrheim		DE	
Wurtz, Jochen	Bingen am Rhein		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	
Schnabel, Gerhard	Elsfeld		DE	

US-CL-CURRENT: 504/211; 504/358, 514/772, 514/964

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 5. Document ID: US 20020019314 A1

L6: Entry 5 of 8

File: PGPB

Feb 14, 2002

PGPUB-DOCUMENT-NUMBER: 20020019314

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020019314 A1

TITLE: Combinations of crop protection agents with cationic polymers

PUBLICATION-DATE: February 14, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Frisch, Gerhard	Wehrheim		DE	
de Una, Julio Martinez	Liederbach		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	
Schnabel, Gerhard	Elsfeld		DE	

US-CL-CURRENT: 504/358; 514/788

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 6. Document ID: US 20020016263 A1

L6: Entry 6 of 8

File: PGPB

Feb 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020016263

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020016263 A1

TITLE: Liquid formulations

PUBLICATION-DATE: February 7, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wurtz, Jochen	Bingen am Rhein		DE	
Maier, Thomas	Hofheim		DE	
Schnabel, Gerhard	Elsenfeld		DE	
Haase, Detlev	Frankfurt		DE	

US-CL-CURRENT: 504/362; 504/363

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 7. Document ID: US 6403535 B1

L6: Entry 7 of 8

File: USPT

Jun 11, 2002

US-PAT-NO: 6403535

DOCUMENT-IDENTIFIER: US 6403535 B1

TITLE: Substituted thiazol(in) ylideneamino sulfonylamino  
(thio)carbonyl-triazolinones

DATE-ISSUED: June 11, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Muller; Klaus-Helmut	Dusseldorf			DE
Konig; Klaus	Odenthal			DE
Jansen; Johannes Rudolf	Monheim			DE
Gesing; Ernst Rudolf F.	Erkrath			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dollinger; Markus	Overland Park	KS		
Wetcholowsky; Ingo	Cond. Estancia Marambaia			BR

US-CL-CURRENT: 504/268; 548/194

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 8. Document ID: US 6300323 B1

L6: Entry 8 of 8

File: USPT

Oct 9, 2001

US-PAT-NO: 6300323

DOCUMENT-IDENTIFIER: US 6300323 B1

TITLE: (Poly)ethereal ammonium salts of herbicides bearing acidic moieties and their  
use as herbicides

DATE-ISSUED: October 9, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Haga; Takahiro	Concord	OH		
Crosby; Kevin E.	Concord	OH		
Schussler; Jeffrey R.	Chardon	OH		

US-CL-CURRENT: 514/76; 514/114, 562/553

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMNC
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Terms	Documents
l1 and L5	8

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L6: Entry 1 of 8

File: PGPB

Aug 22, 2002

PGPUB-DOCUMENT-NUMBER: 20020115569  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020115569 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: August 22, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Schnabel, Gerhard	Elsenfeld		DE	
Kocur, Jean	Hofheim		DE	
Krause, Hans-Peter	Hofheim		DE	
Una, Julio Martinez de	Liederbach		DE	
Huff, Hans Philipp	Eppstein		DE	
Bickers, Udo	Weitmarschen		DE	

APPL-NO: 10/ 023323 [PALM]  
DATE FILED: December 18, 2001

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	10063960.7	2000DE-10063960.7	December 20, 2000

INT-CL: [07] A01 N 37/34, A01 N 25/00

US-CL-PUBLISHED: 504/310; 504/358

US-CL-CURRENT: 504/310; 504/358

## ABSTRACT:

The present invention relates to a herbicidal composition, comprising

A) one or more compounds of the formula (I) 1

in which

Hal.sup.1 and Hal.sup.2 are identical or different halogen atoms,

R.sup.1 is H, a cation or a C.sub.1-C.sub.20-carbon-containing radical and

B) one or more surfactants, comprising as structural element at least 12 alkylene oxide units.

**WEST**

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L6: Entry 1 of 8

File: PGPB

Aug 22, 2002

DOCUMENT-IDENTIFIER: US 20020115569 A1

TITLE: Herbicidal composition

Summary of Invention Paragraph (12):

[0012] Preferred compounds of the formula (I) are compounds in which R<sup>sup.1</sup> is H, a C<sub>sub.1</sub>-C<sub>sub.20</sub>-carbon-containing radical, for example a C<sub>sub.1</sub>-C<sub>sub.20</sub>-acyl radical, or a cation such as an ammonium ion, for example .sup..sym.NH.sub.4, .sup..sym.NH.sub.3CH.sub.2CH.sub.2OH, .sup..sym.NH.sub.2 (CH.sub.2CH.sub.2OH).sub.2, .sup..sym.NH(CH.sub.2CH.sub.2OH).sub.3, .sup..sym.N(CH.sub.2CH.sub.2OH).sub.4, .sup..sym.NH.sub.3(C.sub.1-C.sub.18)-alkyl, .sup..sym.NH.sub.2[(C.sub.1-C.sub.18)-alkyl].sub.2, .sup..sym.NH[(C-C.sub.18)-alkyl].sub.3 or .sup..sym.N[(C.sub.1-C.sub.18)-alkyl].sub.4, a sulfonium ion, for example .sup..sym.S[(C.sub.1-C.sub.6)-alkyl].sub.3, a phosphonium ion, for example .sup..sym.P[(C.sub.1-C.sub.6)-alkyl].sub.4, an alkali metal ion, for example Na<sup>sup..sym.</sup> or K<sup>sup..sym.</sup>, or an alkaline earth metal ion, for example 1/2 Ca<sup>sup.2.sym.</sup>, or 1/2 Mg<sup>sup.2.sym.</sup>, or a transition group metal ion, for example, 1/2 Zn<sup>sup.2.sym.</sup>.

Summary of Invention Paragraph (168):

[0167] 3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-1-(2-methoxycarbonyl-5-iodophenyl-sulfonyl)urea (iodosulfuron-methyl and its sodium salt, WO 92/13845),

Summary of Invention Paragraph (209):

[0208] Typical representatives of these active substances are, inter alia, the compounds listed hereinbelow: amidosulfuron, azimsulfuron, bensulfuron-methyl, chlorimuron-ethyl, chlorsulfuron, cinosulfuron, cyclosulfamuron, ethametsulfuron-methyl, ethoxysulfuron, flazasulfuron, flupyrsulfuron-methyl-sodium, halosulfuron-methyl, imazosulfuron, metsulfuron-methyl, nicosulfuron, oxasulfuron, primisulfuron-methyl, prosulfuron, pyrazosulfuron-ethyl, rimsulfuron, sulfometuron-methyl, sulfosulfuron, thifensulfuron-methyl, triasulfuron, tribenuron-methyl, triflusulfuron-methyl, iodosulfuron-methyl and its sodium salt (WO 92/13845), mesosulfuron-methyl and its sodium salt (Agrow No. 347, Mar. 3, 2000, page 22 (PJB Publications Ltd. 2000)) and foramsulfuron and its sodium salt (Agrow No.338, Oct. 15, 1999, page 26 (PJB Publications Ltd. 2000)).



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L6: Entry 2 of 8

File: PGPB

May 9, 2002

PGPUB-DOCUMENT-NUMBER: 20020055436  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020055436 A1

TITLE: Combinations of crop protection agents with organic or inorganic carrier materials

PUBLICATION-DATE: May 9, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Krause, Hans-Peter	Hofheim		DE	
Schnabel, Gerhard	Elsfeld		DE	
Frisch, Gerhard	Wehrheim		DE	
Wurtz, Jochen	Bingen am Rhein		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Auler, Thomas	Bad Soden		DE	
Melendez, Alvaro	Schwalbach		DE	
Haase, Detlev	Frankfurt		DE	

APPL-NO: 09/ 853313 [PALM]  
DATE FILED: May 10, 2001

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	10022989.1	2000DE-10022989.1	May 11, 2000

INT-CL: [07] A01 N 63/00, A01 N 25/32, A01 N 25/28, A01 N 25/10, A01 N 25/00

US-CL-PUBLISHED: 504/118; 504/359, 504/360, 504/361, 504/103, 514/949, 514/950, 514/962, 514/963, 514/772

US-CL-CURRENT: 504/118; 504/103, 504/359, 504/360, 504/361, 514/772, 514/949, 514/950, 514/962, 514/963

## ABSTRACT:

The present invention describes the use of a combination of an agrochemically active compound and a solid carrier material which surrounds the active compound, to suppress antagonistic interactions in a mixture comprising the active compound surrounded by the carrier material, and at least one further agrochemically active compound. Preferred formulations comprising such a combination include herbicides combined with a carrier material together with a safener and/or a growth regulator. Using the formulations according to the present invention, it is possible to suppress antagonistic interactions between different active compounds.

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L6: Entry 4 of 8

File: PGPB

Apr 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020042345

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020042345 A1

TITLE: Combination of crop protection agents with hydrogen bond-forming polymers

PUBLICATION-DATE: April 11, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kocur, Jean	Hofheim		DE	
Frisch, Gerhard	Wehrheim		DE	
Wurtz, Jochen	Bingen am Rhein		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	
Schnabel, Gerhard	Elsfeld		DE	

APPL-NO: 09/ 853314 [PALM]

DATE FILED: May 10, 2001

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	10022990.5	2000DE-10022990.5	May 11, 2000

INT-CL: [07] A01 N 47/36, A01 N 25/00

US-CL-PUBLISHED: 504/211; 504/358, 514/772, 514/964

US-CL-CURRENT: 504/211; 504/358, 514/772, 514/964

## ABSTRACT:

The present invention describes the combination of an agrochemically active compound with a polymer with formation of hydrogen bonds for the controlled release of this active compound. Both the polymer and active compound have functional groups which permit the formation of hydrogen bonds.

**WEST**

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L6: Entry 6 of 8

File: PGPB

Feb 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020016263  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020016263 A1

TITLE: Liquid formulations

PUBLICATION-DATE: February 7, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wurtz, Jochen	Bingen am Rhein		DE	
Maier, Thomas	Hofheim		DE	
Schnabel, Gerhard	Elsenfeld		DE	
Haase, Detlev	Frankfurt		DE	

APPL-NO: 09/ 841820 [PALM]  
DATE FILED: April 25, 2001

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	10020671.9-41	2000DE-10020671.9-41	April 27, 2000

INT-CL: [07] A01 N 25/02, A01 N 25/04, A01 N 25/16

US-CL-PUBLISHED: 504/362; 504/363

US-CL-CURRENT: 504/362; 504/363

## ABSTRACT:

The present invention relates to liquid formulations (preparations) comprising a) one or more derivatives of polycarboxylic acids and b) one or more active compounds from the group of the ALS inhibitors.

**WEST**

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L6: Entry 7 of 8

File: USPT

Jun 11, 2002

US-PAT-NO: 6403535

DOCUMENT-IDENTIFIER: US 6403535 B1

TITLE: Substituted thiazol(in) ylideneamino sulfonylamino  
(thio)carbonyl-triazolinones

DATE-ISSUED: June 11, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Muller; Klaus-Helmut	Dusseldorf			DE
Konig; Klaus	Odenthal			DE
Jansen; Johannes Rudolf	Monheim			DE
Gesing; Ernst Rudolf F.	Erkrath			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dollinger; Markus	Overland Park	KS		
Wetcholowsky; Ingo	Cond. Estancia Marambaia			BR

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Bayer Aktiengesellschaft	Leverkusen			DE	03

APPL-NO: 09/ 787479 [PALM]

DATE FILED: April 27, 2001

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
DE	198 43 766	September 24, 1998

## PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
PCT/EP99/06753	September 13, 1999	WO00/17196	Mar 30, 2000	Apr 27, 2001	Apr 27, 2001

INT-CL: [07] A01 N 47/38, C07 D 417/12

US-CL-ISSUED: 504/268; 548/194

US-CL-CURRENT: 504/268; 548/194

FIELD-OF-SEARCH: 348/194, 504/268

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>5085684</u>	February 1992	Muller et al.	71/92
<input type="checkbox"/>	<u>5534486</u>	July 1996	Muller et al.	504/273
<input type="checkbox"/>	<u>5541337</u>	July 1996	Muller et al.	548/263.6
<input type="checkbox"/>	<u>5552369</u>	September 1996	Findeisen et al.	504/273
<input type="checkbox"/>	<u>5597939</u>	January 1997	Muller et al.	558/8
<input type="checkbox"/>	<u>5652372</u>	July 1997	Muller et al.	548/263.4
<input type="checkbox"/>	<u>5861358</u>	January 1999	Findeisen et al.	504/273
<input type="checkbox"/>	<u>5869681</u>	February 1999	Muller et al.	548/263.6
<input type="checkbox"/>	<u>5972844</u>	October 1999	Muller et al.	504/273

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
3936623	May 1991	DE	
4411913	October 1995	DE	
0341489	November 1989	EP	
0422469	April 1991	EP	
0425948	May 1991	EP	
93/24482	December 1993	WO	

ART-UNIT: 1626

PRIMARY-EXAMINER: Gerstl; Robert

ATTY-AGENT-FIRM: Gil; Joseph C.

## ABSTRACT:

The invention relates to novel substituted thiazol(in)ylidenaminosulphonyl-amino(thio)carbonyl-triazolinones of the formula (I)  
##STR1##

in which

Q represents oxygen or sulphur,

R.sup.1 represents hydrogen, amino, alkylideneamino or represents an in each case optionally substituted radical from the group consisting of alkyl, alkoxy, alkylamino, dialkylamino, alkanoylamino, alkenyl, alkynyl, alkenyloxy, cycloalkyl, cycloalkylalkyl, cycloalkylamino, aryl and arylalkyl,

R.sup.2 represents hydrogen, cyano, halogen or represents an in each case optionally substituted radical from the group consisting of alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino, alkenyl, alkynyl, alkenyloxy, alkenylthio, alkenylamino, cycloalkyl, cycloalkylalkyl, cycloalkyloxy, cycloalkylthio, cycloalkylamino, aryl, aryloxy, arylthio, arylamino, arylalkyl, arylalkoxy, arylalkylthio and arylalkylamino,

R.sup.3 represents an in each case optionally substituted radical from the group consisting of alkyl, alkoxy, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, aryl and arylalkyl,

- 
- 
- R.sup.4 represents hydrogen, cyano, halogen or optionally substituted alkyl,  
R.sup.5 represents hydrogen, cyano, halogen or optionally substituted alkyl,  
and to salts of compounds of the formula (I), to processes for preparing the novel  
compounds and to their use as herbicides.

7 Claims, 0 Drawing figures

**WEST****End of Result Set**

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L6: Entry 8 of 8

File: USPT

Oct 9, 2001

US-PAT-NO: 6300323

DOCUMENT-IDENTIFIER: US 6300323 B1

TITLE: (Poly)ethereal ammonium salts of herbicides bearing acidic moieties and their use as herbicides

DATE-ISSUED: October 9, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Haga; Takahiro	Concord	OH		
Crosby; Kevin E.	Concord	OH		
Schussler; Jeffrey R.	Chardon	OH		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Ishihara Sangyo Kaisha, Ltd.	Osaka			JP	03

APPL-NO: 09/ 634630 [PALM]

DATE FILED: August 8, 2000

INT-CL: [07] A01 N 57/12, C07 C 229/06

US-CL-ISSUED: 514/76; 514/114, 562/553

US-CL-CURRENT: 514/76; 514/114, 562/553

FIELD-OF-SEARCH: 562/553, 514/76, 514/114

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>3799758</u>	March 1974	Franz	
<input type="checkbox"/>	<u>3853530</u>	December 1974	Franz	
<input type="checkbox"/>	<u>4140513</u>	February 1979	Prill	
<input type="checkbox"/>	<u>4315765</u>	February 1982	Large	
<input type="checkbox"/>	<u>4405531</u>	September 1983	Franz	
<input type="checkbox"/>	<u>4481026</u>	November 1984	Prisbylla	
<input type="checkbox"/>	<u>4507250</u>	March 1985	Bakel	
<input type="checkbox"/>	<u>5750468</u>	May 1998	Wright et al.	504/206

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
WO 99/05914	February 1999	WO	

ART-UNIT: 161

PRIMARY-EXAMINER: Richter, Johann

ASSISTANT-EXAMINER: Davis, Brian J.

ATTY-AGENT-FIRM: Sughrue, Mion, Zinn, Macpeak &amp; Seas, PLLC

## ABSTRACT:

A compound ##STR1##

Wherein x, y, and z are integers from 0 to 3; and

the (poly)ethereal amine is at least one selected from compounds of formula II.sup.1 through II.sup.5 : ##STR2##

6 Claims, 0 Drawing figures





☐ 3. Document ID: US 20030100613 A1

L17: Entry 3 of 74

File: PGPB

May 29, 2003

PGPUB-DOCUMENT-NUMBER: 20030100613  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20030100613 A1

TITLE: Substituted imide derivatives

PUBLICATION-DATE: May 29, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Riebel, Hans-Jochem	Selters		DE	
Herrmann, Stefan	Langenfeld		DE	
Hense, Achim	Leichlingen		DE	
Gesing, Ernst-Rudolf	Erkrath		DE	
Kather, Kristian	Koln		DE	
Lehr, Stefan	Langenfeld		DE	
Andersch, Wolfram	Gladbach		DE	
Drewes, Mark Wilhelm	Langenfeld		DE	
Feucht, Dieter	Monheim		DE	
Harder, Achim	Koln		DE	

US-CL-CURRENT: 514/609; 514/610, 564/103, 564/108

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	AMC
Draw Desc	Image									

☐ 4. Document ID: US 20030087761 A1

L17: Entry 4 of 74

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030087761  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20030087761 A1

TITLE: Synergistic active compound combinations for controlling harmful plants

PUBLICATION-DATE: May 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ahrens, Hartmut	Frankfurt		DE	
Dietrich, Hansjorg	Hofheim		DE	
Willms, Lothar	Hofheim		DE	
Hacker, Erwin	Hochheim		DE	
Bieringer, Hermann	Eppstein		DE	

US-CL-CURRENT: 504/133

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMIC

☐ 5. Document ID: US 20030078167 A1

L17: Entry 5 of 74

File: PGPB

Apr 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030078167

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030078167 A1

TITLE: Herbicides comprising benzoylcyclohexanediones and safeners

PUBLICATION-DATE: April 24, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ziemer, Frank	Kriftel		DE	
Almsick, Andreas van	Karben		DE	
Willms, Lothar	Hofheim		DE	
Auler, Thomas	Bad Soden		DE	
Bieringer, Hermann	Eppstein		DE	
Hacker, Erwin	Hochhiem		DE	
Rosinger, Christopher	Hofhiem		DE	

US-CL-CURRENT: 504/271; 504/294, 504/302, 504/309, 504/326, 504/348

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 6. Document ID: US 20030069140 A1

L17: Entry 6 of 74

File: PGPB

Apr 10, 2003

PGPUB-DOCUMENT-NUMBER: 20030069140

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030069140 A1

TITLE: Substitutes 2-aryl-1,2,4-triazine-3,5-di(thi)one

PUBLICATION-DATE: April 10, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Linker, Karl-Heinz	Leverkusen		DE	
Kluth, Joachim	Langenfeld		DE	
Drewes, Mark Wilhelm	Langenfeld		DE	
Dahmen, Peter	Neuss		DE	
Feucht, Dieter	Monheim		DE	
Pontzen, Rolf	Leichlingen		DE	

US-CL-CURRENT: 504/229; 544/182

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC

☐ 7. Document ID: US 20030069137 A1

L17: Entry 7 of 74

File: PGPB

Apr 10, 2003

PGPUB-DOCUMENT-NUMBER: 20030069137

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030069137 A1

TITLE: Synergistic herbicidal compositions comprising herbicides from the benzoylcyclohexanedione group for use in maize crops

PUBLICATION-DATE: April 10, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Almsick, Andreas van	Karben		DE	
Willms, Lothar	Hofheim		DE	
Hacker, Erwin	Hochheim		DE	
Bieringer, Hermann	Eppstein		DE	

US-CL-CURRENT: 504/138; 504/134, 504/137

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC

☒ 8. Document ID: US 20030060367 A1

L17: Entry 8 of 74

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030060367

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030060367 A1

TITLE: Herbicide combinations comprising specific sulfonylureas

PUBLICATION-DATE: March 27, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bieringer, Hermann	Eppstein		DE	
Huff, Hans Philipp	Eppstein		DE	
Hacker, Erwin	Hochheim		DE	

US-CL-CURRENT: 504/133; 504/134, 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 9. Document ID: US 20030023386 A1

L17: Entry 9 of 74

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030023386  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20030023386 A1

TITLE: Metabolome profiling methods using chromatographic and spectroscopic data in  
pattern recognition analysis

PUBLICATION-DATE: January 30, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Aranibar, Nelly	Lawrenceville	NJ	US	
Ott, Karl-Heinz	Lawrenceville	NJ	US	
Stockton, Gerald	Yardley	PA	US	

US-CL-CURRENT: 702/19

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 10. Document ID: US 20030022792 A1

L17: Entry 10 of 74

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022792  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20030022792 A1

TITLE: HERBICIDAL COMPOSITIONS FOR TOLERANT OR RESISTANT CEREAL CROPS

PUBLICATION-DATE: January 30, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
HACKER, ERWING	HOCHHEIM		DE	
BIERINGER, HERMANN	EPPSTEIN		DE	
WILLMS, LOTHAR	HOFHEIM		DE	

US-CL-CURRENT: 504/127; 504/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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Terms	Documents
13 and salts	74

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 11 through 20 of 74 returned.**☐ 11. Document ID: US 20030019640 A1

L17: Entry 11 of 74

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030019640

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030019640 A1

TITLE: Compositions including a recycled paper by-product and method for using the compositions

PUBLICATION-DATE: January 30, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hatcher, Billy J.	Donie	TX	US	

US-CL-CURRENT: [169/47](#); [169/46](#), [169/48](#), [169/49](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
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☐ 12. Document ID: US 20030004064 A1

L17: Entry 12 of 74

File: PGPB

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030004064

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030004064 A1

TITLE: Synergistic active compound combinations for controlling harmful plants

PUBLICATION-DATE: January 2, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ahrens, Hartmut	Frankfurt		DE	
Minn, Klemens	Hattersheim		DE	
Dietrich, Hansjorg	Hofheim		DE	
Willms, Lothar	Hofheim		DE	
Hacker, Erwin	Hochheim		DE	
Bieringer, Hermann	Eppstein		DE	

US-CL-CURRENT: [504/133](#); [504/134](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☐ 13. Document ID: US 20020188136 A1

L17: Entry 13 of 74

File: PGPB

Dec 12, 2002

PGPUB-DOCUMENT-NUMBER: 20020188136

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020188136 A1

TITLE: Arylphenyl-substituted cyclic ketoenols

PUBLICATION-DATE: December 12, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lieb, Folker	Leverkusen	KS	DE	
Fischer, Reiner	Monheim	KS	DE	
Graff, Alan	Koln		DE	
Schneider, Udo	Leverkusen		DE	
Bretschneider, Thomas	Lohmar		DE	
Erdelen, Christoph	Leichlingen		DE	
Andersch, Wolfram	Bergisch Gladbach		DE	
Drewes, Mark-Wilhelm	Langenfeld		DE	
Dollinger, Markus	Overland Park		US	
Wetcholowsky, Ingo	Cond. Estancia Marambaia		BR	
Myers, Randy Allen	Overland Park		US	

US-CL-CURRENT: 548/368.4; 548/544, 549/313, 549/62

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 14. Document ID: US 20020173425 A1

L17: Entry 14 of 74

File: PGPB

Nov 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020173425

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020173425 A1

TITLE: Substituted phenyluracils

PUBLICATION-DATE: November 21, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Andree, Roland	Langenfeld		DE	
Schwarz, Hans-Georg	Langenfeld		DE	
Linker, Karl-Heinz	Leverkusen		DE	
Drewes, Mark Wilhelm	Langenfeld		DE	
Dahmen, Peter	Neuss		DE	
Feucht, Dieter	Monheim		DE	
Pontzen, Rolf	Leichlingen		DE	

US-CL-CURRENT: [504/243](#); [544/309](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 15. Document ID: US 20020133007 A1

L17: Entry 15 of 74

File: PGPB

Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020133007

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020133007 A1

TITLE: Substituted benzene compounds, process for their preparation, and herbicidal and defoliant compositions containing them

PUBLICATION-DATE: September 19, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gupta, Sandeep	Concord	OH	US	
Wu, Shao-Yong	Fremont	CA	US	
Tsukamoto, Masamitsu	Mayfield Heights	OH	US	
Pulman, David A.	Mentor	OH	US	
Ying, Bai-Ping	Indianapolis	IN	US	

US-CL-CURRENT: [544/235](#); [544/236](#), [544/239](#), [544/309](#), [548/251](#), [548/263.2](#), [548/377.1](#), [548/476](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 16. Document ID: US 20020115569 A1

L17: Entry 16 of 74

File: PGPB

Aug 22, 2002

PGPUB-DOCUMENT-NUMBER: 20020115569

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020115569 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: August 22, 2002

## INVENTOR-INFORMATION:



NAME	CITY	STATE	COUNTRY	RULE-47
Schnabel, Gerhard	Elsenfeld		DE	
Kocur, Jean	Hofheim		DE	
Krause, Hans-Peter	Hofheim		DE	
Una, Julio Martinez de	Liederbach		DE	
Huff, Hans Philipp	Eppstein		DE	
Bickers, Udo	Weitmarschen		DE	

US-CL-CURRENT: [504/310](#); [504/358](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 17. Document ID: US 20020107148 A1

L17: Entry 17 of 74

File: PGPB

Aug 8, 2002

PGPUB-DOCUMENT-NUMBER: 20020107148  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020107148 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: August 8, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Crosby, Kevin E.	Concord	OH	US	
Schussler, Jeffrey R.	Chardon	OH	US	
Haga, Takahiro	Shiga-ken		JP	

US-CL-CURRENT: [504/127](#); [504/130](#), [504/131](#), [504/133](#), [504/136](#), [504/137](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMC

☐ 18. Document ID: US 20020094934 A1

L17: Entry 18 of 74

File: PGPB

Jul 18, 2002

PGPUB-DOCUMENT-NUMBER: 20020094934  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020094934 A1

TITLE: HERBICIDAL COMPOSITIONS FOR TOLERANT OR RESISTANT MAIZE CROPS

PUBLICATION-DATE: July 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
HACKER, ERWIN	HOCHHEIM		DE	
BIERINGER, HERMANN	EPPSTEIN		DE	
WILLMS, LOTHAR	HOFHEIM		DE	

US-CL-CURRENT: 504/127; 504/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

R000C

☐ 19. Document ID: US 20020091066 A1

L17: Entry 19 of 74

File: PGPB

Jul 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020091066

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020091066 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: July 11, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wurtz, Jochen	Bingen am Rhein		DE	
Kocur, Jean	Hofheim		DE	
Krause, Hans-Peter	Hofheim		DE	
Martinez de Una, Julio	Liederbach		DE	
Hasse, Detlev	Frankfurt		DE	
Bickers, Udo	Wietmarschen		DE	
Schnabel, Gerhard	Elsenfeld		DE	

US-CL-CURRENT: 504/211; 504/212, 504/214, 504/358

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

R000C

☐ 20. Document ID: US 20020072474 A1

L17: Entry 20 of 74

File: PGPB

Jun 13, 2002

PGPUB-DOCUMENT-NUMBER: 20020072474

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020072474 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: June 13, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bickers, Udo	Wietmarschen		DE	
Bieringer, Hermann	Eppstein		DE	
Frisch, Gerhard	Wehrheim		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 21 through 30 of 74 returned.**☐ 21. Document ID: US 20020058591 A1

L17: Entry 21 of 74

File: PGPB

May 16, 2002

PGPUB-DOCUMENT-NUMBER: 20020058591  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020058591 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: May 16, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bickers, Udo	Wietmarschen		DE	
Bieringer, Hermann	Eppstein		DE	
Frisch, Gerhard	Wehrheim		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	

US-CL-CURRENT: 504/211

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KMC](#)☐ 22. Document ID: US 20020055436 A1

L17: Entry 22 of 74

File: PGPB

May 9, 2002

PGPUB-DOCUMENT-NUMBER: 20020055436  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020055436 A1

TITLE: Combinations of crop protection agents with organic or inorganic carrier materials

PUBLICATION-DATE: May 9, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Krause, Hans-Peter	Hofheim		DE	
Schnabel, Gerhard	Elsenfeld		DE	
Frisch, Gerhard	Wehrheim		DE	
Wurtz, Jochen	Bingen am Rhein		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Auler, Thomas	Bad Soden		DE	
Melendez, Alvaro	Schwalbach		DE	
Haase, Detlev	Frankfurt		DE	

US-CL-CURRENT: [504/118](#); [504/103](#), [504/359](#), [504/360](#), [504/361](#), [514/772](#), [514/949](#),  
[514/950](#), [514/962](#), [514/963](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

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☐ 23. Document ID: US 20020055435 A1

L17: Entry 23 of 74

File: PGPB

May 9, 2002

PGPUB-DOCUMENT-NUMBER: 20020055435  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020055435 A1

TITLE: Herbicidal mixtures

PUBLICATION-DATE: May 9, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Baltruschat, Helmut Siegfried	Schweppenhausen		DE	
Brandt, Astrid	Mainz		DE	

US-CL-CURRENT: [504/103](#); [504/104](#), [504/105](#), [504/106](#), [504/107](#), [504/108](#), [504/109](#),  
[504/110](#), [504/111](#), [504/112](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

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☐ 24. Document ID: US 20020042345 A1

L17: Entry 24 of 74

File: PGPB

Apr 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020042345  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020042345 A1

TITLE: Combination of crop protection agents with hydrogen bond-forming polymers

PUBLICATION-DATE: April 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kocur, Jean	Hofheim		DE	
Frisch, Gerhard	Wehrheim		DE	
Wurtz, Jochen	Bingen am Rhein		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	
Schnabel, Gerhard	Elsfeld		DE	

US-CL-CURRENT: [504/211](#); [504/358](#), [514/772](#), [514/964](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 25. Document ID: US 20020026048 A1

L17: Entry 25 of 74

File: PGPB

Feb 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020026048

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020026048 A1

TITLE: Pyridazinone derivatives

PUBLICATION-DATE: February 28, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Komori, Takashi	Osaka		JP	

US-CL-CURRENT: [544/239](#); [504/238](#), [544/237](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 26. Document ID: US 20020019314 A1

L17: Entry 26 of 74

File: PGPB

Feb 14, 2002

PGPUB-DOCUMENT-NUMBER: 20020019314

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020019314 A1

TITLE: Combinations of crop protection agents with cationic polymers

PUBLICATION-DATE: February 14, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Frisch, Gerhard	Wehrheim		DE	
de Una, Julio Martinez	Liederbach		DE	
Bickers, Udo	Wietmarschen		DE	
Hacker, Erwin	Hochheim		DE	
Huff, Hans Philipp	Eppstein		DE	
Schnabel, Gerhard	Elsfeld		DE	

US-CL-CURRENT: 504/358; 514/788

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 27. Document ID: US 20020016263 A1

L17: Entry 27 of 74

File: PGPB

Feb 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020016263  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020016263 A1

TITLE: Liquid formulations

PUBLICATION-DATE: February 7, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wurtz, Jochen	Bingen am Rhein		DE	
Maier, Thomas	Hofheim		DE	
Schnabel, Gerhard	Elsfeld		DE	
Haase, Detlev	Frankfurt		DE	

US-CL-CURRENT: 504/362; 504/363

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 28. Document ID: US 20020004457 A1

L17: Entry 28 of 74

File: PGPB

Jan 10, 2002

PGPUB-DOCUMENT-NUMBER: 20020004457  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020004457 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: January 10, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Nevill, David John	Riehen		CH	
Zoschke, Andreas	Weil am Rhein		DE	
Stehli, Andreas	Gipf-Oberfrick		CH	

US-CL-CURRENT: 504/138

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

☐ 29. Document ID: US 20010044382 A1

L17: Entry 29 of 74

File: PGPB

Nov 22, 2001

PGPUB-DOCUMENT-NUMBER: 20010044382  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20010044382 A1

TITLE: Herbicide

PUBLICATION-DATE: November 22, 2001

## INVENTOR - INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ruegg, Willy	Gipf-Oberfrick		CH	

US-CL-CURRENT: 504/139; 504/149

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

☐ 30. Document ID: US 20010004628 A1

L17: Entry 30 of 74

File: PGPB

Jun 21, 2001

PGPUB-DOCUMENT-NUMBER: 20010004628  
PGPUB-FILING-TYPE: new-utility  
DOCUMENT-IDENTIFIER: US 20010004628 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: June 21, 2001

## INVENTOR - INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ruegg, Willy	Gipf-Oberfrick		CH	

US-CL-CURRENT: 504/129

[illegible]

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 31 through 40 of 74 returned.**☐ 31. Document ID: US 6576593 B2

L17: Entry 31 of 74

File: USPT

Jun 10, 2003

US-PAT-NO: 6576593

DOCUMENT-IDENTIFIER: US 6576593 B2

TITLE: Synergistic herbicidal compositions comprising herbicides from the benzoylcyclohexanedione group for use in maize corps

DATE-ISSUED: June 10, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
van Almsick; Andreas	Karben			DE
Willms; Lothar	Hofheim			DE
Hacker; Erwin	Hochheim			DE
Bieringer; Hermann	Eppstein			DE

US-CL-CURRENT: [504/134](#); [504/136](#), [504/138](#), [504/271](#)

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">KMC</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>									

☐ 32. Document ID: US 6573219 B1

L17: Entry 32 of 74

File: USPT

Jun 3, 2003

US-PAT-NO: 6573219

DOCUMENT-IDENTIFIER: US 6573219 B1

TITLE: Substituted heterocyclyl-2H-chromenes

DATE-ISSUED: June 3, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Linker; Karl-Heinz	Leverkusen			DE
Andree; Roland	Langenfeld			DE
Reubke; Karl-Julius	Koln			DE
Schallner; Otto	Monheim			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dahmen; Peter	Neuss			DE
Feucht; Dieter	Monheim			DE
Pontzen; Rolf	Leichlingen			DE



US-CL-CURRENT: 504/229; 504/230, 504/238, 504/243, 504/273, 504/280, 504/282,  
504/285, 504/286, 544/215, 544/238, 544/310, 548/263.2, 548/263.4, 548/360.1,  
548/364.4, 548/454

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 33. Document ID: US 6573218 B1

L17: Entry 33 of 74

File: USPT

Jun 3, 2003

US-PAT-NO: 6573218

DOCUMENT-IDENTIFIER: US 6573218 B1

TITLE: Fused-benzene derivatives useful as herbicides

DATE-ISSUED: June 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tsakamoto; Masamitsu	Mayfield Heights	OH		
Gupta; Sandeep	Concord	OH		
Wu; Shao-Yong	Fremont	CA		
Ying; Bai-Ping	Fishers	IN		
Pulman; David A.	Mentor	OH		

US-CL-CURRENT: 504/221; 504/225, 544/105, 544/51, 544/52

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 34. Document ID: US 6573217 B2

L17: Entry 34 of 74

File: USPT

Jun 3, 2003

US-PAT-NO: 6573217

DOCUMENT-IDENTIFIER: US 6573217 B2

TITLE: Herbicidal compositions

DATE-ISSUED: June 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bickers; Udo	Wietmarschen			DE
Bieringer; Hermann	Eppstein			DE
Frisch; Gerhard	Wehrheim			DE
Hacker; Erwin	Hochheim			DE
Huff; Hans Philipp	Eppstein			DE

US-CL-CURRENT: 504/212; 504/214, 504/333, 504/363

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 35. Document ID: US 6569805 B1

L17: Entry 35 of 74

File: USPT

May 27, 2003

US-PAT-NO: 6569805

DOCUMENT-IDENTIFIER: US 6569805 B1

TITLE: Herbicidal compositions

DATE-ISSUED: May 27, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Krahmer; Hansjorg	Hofheim			DE
Auler; Thomas	Bad Soden			DE
Rosinger; Christopher	Hofheim			DE
Hagemeister; Heinz	Dusseldorf			DE
Drexler; David	Kelkheim			DE

US-CL-CURRENT: 504/103; 504/106, 504/214, 504/362

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 36. Document ID: US 6562760 B1

L17: Entry 36 of 74

File: USPT

May 13, 2003

US-PAT-NO: 6562760

DOCUMENT-IDENTIFIER: US 6562760 B1

TITLE: Selective herbicides based on a substituted phenyl sulfonyl amino carbonyl triazolinone

DATE-ISSUED: May 13, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Feucht; Dieter	Monheim			DE
Santel; Hans-Joachim	Leawood	KS		
Lurssen; Klaus	Bergisch-Gladbach			DE
Wetcholowsky; Ingo	Cond. Estancia Marambaia			BR
Dahmen; Peter	Neuss			DE
Muller; Klaus-Helmut	Dusseldorf			DE

US-CL-CURRENT: 504/273

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 37. Document ID: US 6562759 B1

L17: Entry 37 of 74

File: USPT

May 13, 2003

US-PAT-NO: 6562759

DOCUMENT-IDENTIFIER: US 6562759 B1

TITLE: Substituted phenyl uracils

DATE-ISSUED: May 13, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Andree; Roland	Langenfeld			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dahmen; Peter	Neuss			DE
Feucht; Dieter	Monheim			DE
Pontzen; Rolf	Leichlingen			DE

US-CL-CURRENT: [504/243](#); [544/309](#), [544/311](#), [544/312](#), [544/313](#), [544/314](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 38. Document ID: US 6559102 B1

L17: Entry 38 of 74

File: USPT

May 6, 2003

US-PAT-NO: 6559102

DOCUMENT-IDENTIFIER: US 6559102 B1

TITLE: Substituted 3-aryl-pyrazoles

DATE-ISSUED: May 6, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schallner; Otto	Monheim			DE
Linker; Karl-Heinz	Leverkusen			DE
Kluth; Joachim	Langenfeld			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Feucht; Dieter	Monheim			DE
Pontzen; Rolf	Leichlingen			DE
Wetcholowsky; Ingo	Cond. Estancia Marambaia			BR

US-CL-CURRENT: [504/280](#); [514/406](#), [548/375.1](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 39. Document ID: US 6545161 B2

L17: Entry 39 of 74

File: USPT

Apr 8, 2003

US-PAT-NO: 6545161

DOCUMENT-IDENTIFIER: US 6545161 B2

TITLE: Substituted benzene compounds, process for their preparation, and herbicidal and defoliant compositions containing them

DATE-ISSUED: April 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gupta; Sandeep	Concord	OH		
Wu; Shao-Yong	Fremont	CA		
Tsukamoto; Masamitsu	Mayfield Heights	OH		
Pulman; David A.	Mentor	OH		
Ying; Bai-Ping	Indianapolis	IN		

US-CL-CURRENT: 548/263.2; 504/273, 504/287, 548/264.4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 40. Document ID: US 6544931 B1

L17: Entry 40 of 74

File: USPT

Apr 8, 2003

US-PAT-NO: 6544931

DOCUMENT-IDENTIFIER: US 6544931 B1

TITLE: Substituted heteroaryloxyacetanilides and their use as herbicides

DATE-ISSUED: April 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Muller; Klaus-Helmut	Dusseldorf			DE
Rohe; Lothar	Wuppertal			DE
Kluth; Joachim	Langenfeld			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dahmen; Peter	Neuss			DE
Feucht; Dieter	Monheim			DE
Pontzen; Rolf	Leichlingen			DE

US-CL-CURRENT: 504/262; 504/263, 504/265, 504/267, 504/270, 548/129, 548/132, 548/137, 548/165, 548/182, 548/183, 548/186, 548/187, 548/221, 548/229

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

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L17: Entry 41 of 74

File: USPT

Jan 28, 2003

US-PAT-NO: 6511940

DOCUMENT-IDENTIFIER: US 6511940 B1

TITLE: Combination of herbicides and safeners

DATE-ISSUED: January 28, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ziemer; Frank	Kriftel			DE
Willms; Lothar	Hofheim			DE
Bieringer; Hermann	Eppstein			DE
Hacker; Erwin	Hochheim			DE

US-CL-CURRENT: 504/118; 504/130, 504/138

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">KIMC</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>									

☐ 42. Document ID: US 6495492 B1

L17: Entry 42 of 74

File: USPT

Dec 17, 2002

US-PAT-NO: 6495492

DOCUMENT-IDENTIFIER: US 6495492 B1

TITLE: Substituted 3-aryl-pyrazoles

DATE-ISSUED: December 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schallner; Otto	Monheim			DE
Linker; Karl-Heinz	Leverkusen			DE
Kluth; Joachim	Langenfeld			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Feucht; Dieter	Monheim			DE
Pontzen; Rolf	Leichlingen			DE
Wetcholowsky; Ingo	Estancia Marambaia			BR

US-CL-CURRENT: 504/280; 514/406, 548/375.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 43. Document ID: US 6492301 B1

L17: Entry 43 of 74

File: USPT

Dec 10, 2002

US-PAT-NO: 6492301

DOCUMENT-IDENTIFIER: US 6492301 B1

TITLE: Herbicidal compositions with substituted phenylsulfonylureas for controlling weeds in rice

DATE-ISSUED: December 10, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hacker; Erwin	Hoccheim			DE
Bieringer; Hermann	Eppstein			DE

US-CL-CURRENT: 504/128; 504/132, 504/133, 504/134, 504/135

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 44. Document ID: US 6486096 B1

L17: Entry 44 of 74

File: USPT

Nov 26, 2002

US-PAT-NO: 6486096

DOCUMENT-IDENTIFIER: US 6486096 B1

TITLE: Herbicidal compositions with acylated aminophenylsulfonylureas

DATE-ISSUED: November 26, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hacker; Erwin	Hochheim			DE
Bieringer; Hermann	Eppstein			DE
Schnabel; Gerhard	Grosswallstadt			DE

US-CL-CURRENT: 504/133; 504/128, 504/134, 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 45. Document ID: US 6479432 B1

L17: Entry 45 of 74

File: USPT

Nov 12, 2002

US-PAT-NO: 6479432

DOCUMENT-IDENTIFIER: US 6479432 B1

TITLE: Non-aqueous or low-water suspension concentrates of mixtures of active compounds for crop protection

DATE-ISSUED: November 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sixl; Frank	Selters-Haintchen			DE

US-CL-CURRENT: [504/103](#); [504/106](#), [504/107](#), [504/135](#), [504/136](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

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☐ 46. Document ID: US 6475955 B2

L17: Entry 46 of 74

File: USPT

Nov 5, 2002

US-PAT-NO: 6475955

DOCUMENT-IDENTIFIER: US 6475955 B2

TITLE: Pyridazinone derivatives

DATE-ISSUED: November 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Komori; Takashi	Toyonaka			JP

US-CL-CURRENT: [504/238](#); [544/239](#), [544/241](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

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☐ 47. Document ID: US 6455472 B1

L17: Entry 47 of 74

File: USPT

Sep 24, 2002

US-PAT-NO: 6455472

DOCUMENT-IDENTIFIER: US 6455472 B1

TITLE: Phenyl-substituted cyclic enaminones

DATE-ISSUED: September 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fischer; Reiner	Monheim			DE
Wischnat; Ralf	Koln			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dollinger; Markus	Leverkusen			DE
Erdelen; Christoph	Leichlingen			DE
Feucht; Dieter	Monheim			DE
Wetcholowsky; Ingo	Vinhedo			BR
Wachendorff-Neumann; Ulrike	Neuwied			DE
Philipp; Ulrich	Koln			DE
Rauch; Olga-Tatjana	Kronberg			DE

US-CL-CURRENT: 504/138; 504/130, 540/610, 546/238, 548/566

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	None
Draw Desc	Image									

☐ 48. Document ID: US 6455469 B1

L17: Entry 48 of 74

File: USPT

Sep 24, 2002

US-PAT-NO: 6455469

DOCUMENT-IDENTIFIER: US 6455469 B1

TITLE: Herbicidal composition

DATE-ISSUED: September 24, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Crosby; Kevin E.	Concord	OH		
Schussler; Jeffrey R.	Chardon	OH		
Haga; Takahiro	Shiga-ken			JP

US-CL-CURRENT: 504/127; 504/130, 504/131, 504/133, 504/136, 504/137, 504/138,  
504/139, 504/140, 504/141, 504/142, 504/143, 504/144, 504/146, 504/147, 504/148

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	None
Draw Desc	Image									

☐ 49. Document ID: US 6420313 B1

L17: Entry 49 of 74

File: USPT

Jul 16, 2002

US-PAT-NO: 6420313

DOCUMENT-IDENTIFIER: US 6420313 B1

TITLE: Thienylalkylamino-1,3,5-triazines and the use thereof as herbicides

DATE-ISSUED: July 16, 2002

## INVENTOR-INFORMATION:



NAME	CITY	STATE	ZIP CODE	COUNTRY
Kirsten; Rolf	Monheim			DE
Riebel; Hans-Jochem	Selters			DE
Lehr; Stefan	Langenfeld			DE
Voigt; Katharina	Monheim			DE
Kather; Kristian	Monheim			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dollinger; Markus	Overland Park	KS		
Wetcholowsky; Ingo	Vinhedo			BR
Watanabe; Yuki Yoshi	Oyama			JP
Goto; Toshio	Kokubunji-machi			JP

US-CL-CURRENT: 504/230; 544/207, 544/209

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 50. Document ID: US 6417370 B1

L17: Entry 50 of 74

File: USPT

Jul 9, 2002

US-PAT-NO: 6417370

DOCUMENT-IDENTIFIER: US 6417370 B1

TITLE: Arylphenyl-substituted cyclic keto-enols

DATE-ISSUED: July 9, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lieb; Folker	Leverkusen			DE
Fischer; Reiner	Monheim			DE
Graff; Alan	Koln			DE
Schneider; Udo	Leverkusen			DE
Bretschneider; Thomas	Lohmar			DE
Erdelen; Christoph	Leichlingen			DE
Andersch; Wolfram	Bergisch Gladbach			DE
Drewes; Mark-Wilhelm	Langenfeld			DE
Dollinger; Markus	Overland Park	KS		
Wetcholowsky; Ingo	Cond. Estancia Marambaia			BR
Myers; Randy Allen	Overland Park	KS		

US-CL-CURRENT: 548/408; 548/543, 548/544, 548/577

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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L17: Entry 51 of 74

File: USPT

Jul 2, 2002

US-PAT-NO: 6413907

DOCUMENT-IDENTIFIER: US 6413907 B2

TITLE: Herbicidal composition

DATE-ISSUED: July 2, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruegg; Willy	Gipf-Oberfrick			CH

US-CL-CURRENT: [504/105](#); [504/106](#), [504/107](#), [504/108](#), [504/133](#), [504/136](#), [504/137](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 52. Document ID: US 6410484 B1

L17: Entry 52 of 74

File: USPT

Jun 25, 2002

US-PAT-NO: 6410484

DOCUMENT-IDENTIFIER: US 6410484 B1

TITLE: 6-Hydroxy-5,6-dihydrouracil compound and herbicidal composition containing thereof

DATE-ISSUED: June 25, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Takano; Minoru	Kameoka			JP
Mishima; Hirofumi	Minoo			JP

US-CL-CURRENT: [504/221](#); [504/225](#), [504/243](#), [544/105](#), [544/295](#), [544/309](#), [544/310](#), [544/312](#), [544/314](#), [544/52](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 53. Document ID: US 6403535 B1

L17: Entry 53 of 74

File: USPT

Jun 11, 2002

US-PAT-NO: 6403535

DOCUMENT-IDENTIFIER: US 6403535 B1

TITLE: Substituted thiazol(in) ylideneamino sulfonylamino  
(thio)carbonyl-triazolinones

DATE-ISSUED: June 11, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Muller; Klaus-Helmut	Dusseldorf			DE
Konig; Klaus	Odenthal			DE
Jansen; Johannes Rudolf	Monheim			DE
Gesing; Ernst Rudolf F.	Erkrath			DE
Drewes; Mark Wilhelm	Langenfeld			DE
Dollinger; Markus	Overland Park	KS		
Wetcholowsky; Ingo	Cond. Estancia Marambaia			BR

US-CL-CURRENT: 504/268; 548/194

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 54. Document ID: US 6395684 B1

L17: Entry 54 of 74

File: USPT

May 28, 2002

US-PAT-NO: 6395684

DOCUMENT-IDENTIFIER: US 6395684 B1

TITLE: Selective herbicides based on a substituted phenyl sulfonyl amino carbonyl triazolinone

DATE-ISSUED: May 28, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Feucht; Dieter	Monheim			DE
Santel; Hans-Joachim	Leawood	KS		
Lurssen; Klaus	Bergisch Gladbach			DE
Wetcholowsky; Ingo	Vinhedo			BR
Dahmen; Peter	Neuss			DE
Muller; Klaus-Helmut	Dusseldorf			DE

US-CL-CURRENT: 504/273

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 55. Document ID: US 6355799 B1

L17: Entry 55 of 74

File: USPT

Mar 12, 2002

US-PAT-NO: 6355799

DOCUMENT-IDENTIFIER: US 6355799 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Substituted benzene compounds, process for their preparation, and herbicidal and defoliant compositions containing them

DATE-ISSUED: March 12, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gupta; Sandeep	Concord	OH		
Wu; Shao-Yong	Fremont	CA		
Tsukamoto; Masamitsu	Mayfield Heights	OH		
Pulman; David A.	Mentor	OH		
Ying; Bai-Ping	Indianapolis	IN		

US-CL-CURRENT: 544/309; 544/311, 544/312

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 56. Document ID: US 6300323 B1

L17: Entry 56 of 74

File: USPT

Oct 9, 2001

US-PAT-NO: 6300323

DOCUMENT-IDENTIFIER: US 6300323 B1

TITLE: (Poly)ethereal ammonium salts of herbicides bearing acidic moieties and their use as herbicides

DATE-ISSUED: October 9, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Haga; Takahiro	Concord	OH		
Crosby; Kevin E.	Concord	OH		
Schussler; Jeffrey R.	Chardon	OH		

US-CL-CURRENT: 514/76; 514/114, 562/553

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 57. Document ID: US 6294503 B1

L17: Entry 57 of 74

File: USPT

Sep 25, 2001

US-PAT-NO: 6294503

DOCUMENT-IDENTIFIER: US 6294503 B1

TITLE: Fused heterocycle compounds, process for their preparation, and herbicidal compositions containing them

DATE-ISSUED: September 25, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gupta; Sandeep	Concord	OH		
Wu; Shao-Yong	Willoughby Hills	OH		
Tsukamoto; Masamitsu	Mayfield Hts.	OH		
Ying; Bai-Ping	Concord	OH		
Pulman; David A.	Mentor	OH		

US-CL-CURRENT: 504/225; 544/105

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☒ 58. Document ID: US 6225260 B1

L17: Entry 58 of 74

File: USPT

May 1, 2001

US-PAT-NO: 6225260

DOCUMENT-IDENTIFIER: US 6225260 B1

TITLE: Quaternary ammonium salts of a sulfonylurea

DATE-ISSUED: May 1, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wysong; Robert D.	Wilmington	DE		
Chen; Chia-Chung	Nantou Hsien			TW
Tseng; Chuen-Ing	Lawrenceville	NJ		
Tirol; Arturo A.	Kendall Park	NJ		

US-CL-CURRENT: 504/212; 504/213, 544/189, 544/194, 544/321, 544/331

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 59. Document ID: US 6211118 B1

L17: Entry 59 of 74

File: USPT

Apr 3, 2001

US-PAT-NO: 6211118

DOCUMENT-IDENTIFIER: US 6211118 B1

TITLE: Herbicidal compositions

DATE-ISSUED: April 3, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hoshi; Hisayuki	Toyonaka			JP

US-CL-CURRENT: 504/134; 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 60. Document ID: US 6187920 B1

L17: Entry 60 of 74

File: USPT

Feb 13, 2001

US-PAT-NO: 6187920

DOCUMENT-IDENTIFIER: US 6187920 B1

TITLE: Pyridazinone derivatives

DATE-ISSUED: February 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Komori; Takashi	Toyonaka			JP

US-CL-CURRENT: 544/239; 504/238, 544/237, 544/238, 560/168

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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L17: Entry 61 of 74

File: USPT

Sep 5, 2000

US-PAT-NO: 6114286

DOCUMENT-IDENTIFIER: US 6114286 A

TITLE: Pyrimidinone derivatives

DATE-ISSUED: September 5, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Takano; Minoru	Kameoka			JP

US-CL-CURRENT: 504/240; 504/241, 544/281, 544/282

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 62. Document ID: DE 19919993 A1

L17: Entry 62 of 74

File: EPAB

Nov 2, 2000

PUB-NO: DE019919993A1

DOCUMENT-IDENTIFIER: DE 19919993 A1

TITLE: Control of weeds in tolerant maize crops uses herbicidal combination containing glufosinate, glyphosate, imidazolinone, azole, cyclohexanedione or heteroaryloxyphenoxypionic acid herbicide

PUBN-DATE: November 2, 2000

## INVENTOR-INFORMATION:

NAME	COUNTRY
HACKER, ERWIN	DE
BIERINGER, HERMANN	DE
WILLMS, LOTHAR	DE

INT-CL (IPC): A01 N 57/20; A01 N 43/50

EUR-CL (EPC): A01N057/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 63. Document ID: DE 19937815 A1

L17: Entry 63 of 74

File: EPAB

Mar 2, 2000

PUB-NO: DE019937815A1

DOCUMENT-IDENTIFIER: DE 19937815 A1

TITLE: Herbicidal composition comprises a 2-chloro-4-fluoro-5-(4-methyl-5-trifluoromethyl-3-pyridazinon-2-yl)phenyl(1-5C) non-cyclic hydrocarbylether, and at least one other herbicidal compound

PUBN-DATE: March 2, 2000

## INVENTOR-INFORMATION:

NAME

COUNTRY

HOSHI, HISAYUKI

JP

INT-CL (IPC): A01 N 43/58; A01 N 43/90; A01 N 43/653; A01 N 43/66; A01 N 43/54

EUR-CL (EPC): A01N043/58

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 64. Document ID: DE 10129856 A1 WO 2003000058 A1

L17: Entry 64 of 74

File: DWPI

Jan 2, 2003

DERWENT-ACC-NO: 2003-383129

DERWENT-WEEK: 200337

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TITLE: Synergistic herbicidal composition, especially for selective weed control in crops such as wheat, contains bis-pyrimidinyloxy-benzoic acid derivative, triazolone derivative and another herbicide e.g. acetochlor

INVENTOR: DAHMEN, P; DREWES, M W ; FEUCHT, D ; FUERSCH, H ; KREMER, M ; PONTZEN, R ; WELLMANN, A

PRIORITY-DATA: 2001DE-1029856 (June 21, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10129856 A1	January 2, 2003		021	A01N043/54
WO 2003000058 A1	January 3, 2003	G	000	A01N043/54

INT-CL (IPC): A01 N 43/54; A01 N 43/653; A01 N 47:38; A01 N 47:36; A01 N 47:30; A01 N 43:90; A01 N 43:707; A01 N 43:653 ; A01 N 43:50; A01 N 43:40; A01 N 43/54; A01 N 41:10; A01 N 25:32

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 65. Document ID: WO 2003009686 A1

L17: Entry 65 of 74

File: DWPI

Feb 6, 2003

DERWENT-ACC-NO: 2003-289785

DERWENT-WEEK: 200328

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TITLE: Herbicidal composition useful particularly in cereals, rice and maize, comprises 1-phenyl-3-phenoxypropyne derivative and synergistic co-herbicide

INVENTOR: HALL, R G; HOLE, S ; NEBEL, K ; SCHAETZER, J ; WENGER, J

PRIORITY-DATA: 2001CH-0001377 (July 24, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003009686 A1	February 6, 2003	E	047	A01N037/38

INT-CL (IPC): A01 N 37/38; A01 N 47:38; A01 N 43:84; A01 N 43:42; A01 N 43:40; A01 N 43:28; A01 N 37:40; A01 N 37/38; A01 N 25:32

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Clip Img	Image								

☐ 66. Document ID: US 20030069137 A1 DE 10119729 A1 WO 200285121 A1

L17: Entry 66 of 74

File: DWPI

Apr 10, 2003

DERWENT-ACC-NO: 2003-121888

DERWENT-WEEK: 200327

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TITLE: Synergistic herbicidal composition, especially for selective weed control in maize, containing 2-benzoyl-cyclohexane-1,3-dione derivative and another herbicide, e.g. acetochlor, pendimethalin or tritosulfuron

INVENTOR: BIERINGER, H; HACKER, E ; VAN ALMSICK, A ; WILLMS, L ; ALMSICK, A V

PRIORITY-DATA: 2001DE-1019729 (April 21, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20030069137 A1	April 10, 2003		000	A01N043/64
DE 10119729 A1	October 31, 2002		010	A01N043/80
WO 200285121 A1	October 31, 2002	G	000	A01N043/80

INT-CL (IPC): A01 N 43/36; A01 N 43/58; A01 N 43/64; A01 N 43/80; A01 N 47:36; A01 N 47:34; A01 N 47:06; A01 N 43:90; A01 N 43:82; A01 N 43:70; A01 N 43:653; A01 N 43:50; A01 N 43:10; A01 N 43:08; A01 N 43/80; A01 N 37:40; A01 N 37:26; A01 N 37:22; A01 N 37:20; A01 N 33:18

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Clip Img	Image								

☐ 67. Document ID: DE 10119727 A1 WO 200285118 A2

L17: Entry 67 of 74

File: DWPI

Oct 31, 2002

DERWENT-ACC-NO: 2003-076685

DERWENT-WEEK: 200308

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TITLE: Synergistic herbicidal composition, especially for selective weed control in rice, containing 2-benzoyl-cyclohexane-1,3-dione derivative and another herbicide,

e.g. benfuresate, glyphosate or thiobencarb

INVENTOR: AULER, T; ENDO, K ; HACKER, E ; MILLET, J ; VAN ALMSICK, A

PRIORITY-DATA: 2001DE-1019727 (April 21, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10119727 A1	October 31, 2002		010	A01N043/06
WO 200285118 A2	October 31, 2002	G	000	A01N043/08

INT-CL (IPC): A01 N 35/00; A01 N 41/10; A01 N 43/06; A01 N 43/08; A01 N 43/16; A01 N 47/36; A01 N 57:20; A01 N 47:36; A01 N 47:12; A01 N 43:90; A01 N 43:86; A01 N 43:82; A01 N 43:80; A01 N 43:78; A01 N 43:76; A01 N 43:54; A01 N 43:50; A01 N 43:42; A01 N 43:12; A01 N 43/08; A01 N 39:02; A01 N 37:22; A01 N 33:18

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Clip Img	Image								

☐ 68. Document ID: WO 200280679 A2 DE 10117508 A1 US 20030004064 A1

L17: Entry 68 of 74

File: DWPI

Oct 17, 2002

DERWENT-ACC-NO: 2003-060484

DERWENT-WEEK: 200310

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TITLE: Synergistic herbicidal composition, useful particularly for selective weed control in cereals, comprises an aminotriazine and second herbicide

INVENTOR: AHRENS, H; BIERINGER, H ; DIETRICH, H ; HACKER, E ; MINN, K ; WILLMS, L

PRIORITY-DATA: 2001DE-1017508 (April 7, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200280679 A2	October 17, 2002	G	000	A01N043/70
DE 10117508 A1	October 17, 2002		031	A01N043/68
US 20030004064 A1	January 2, 2003		000	A01N043/64

INT-CL (IPC): A01 N 43/64; A01 N 43/68; A01 N 43/70

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 69. Document ID: WO 200271845 A1 DE 10112104 A1

L17: Entry 69 of 74

File: DWPI

Sep 19, 2002

DERWENT-ACC-NO: 2002-691779

DERWENT-WEEK: 200274

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TITLE: Synergistic herbicidal composition, especially for selective weed control in crops such as rice, containing aryl ketone derivative, another herbicide, e.g. acetochlor, and optionally safener

INVENTOR: DAHMEN, P; DREWES, M ; FEUCHT, D ; GOTO, T ; LEHR, S ; MUELLER, K ;  
PONTZEN, R ; SCHWARZ, H ; SHIRAKURA, S ; DREWES, M W

PRIORITY-DATA: 2001DE-1012104 (March 14, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200271845 A1	September 19, 2002	G	121	A01N043/80
DE 10112104 A1	September 26, 2002		000	A01N043/36

INT-CL (IPC): A01 N 43/34; A01 N 43/36; A01 N 43/48; A01 N 43/50; A01 N 43/54; A01 N 43/64; A01 N 43/653; A01 N 43/713; A01 N 43/72; A01 N 43/74; A01 N 43/80; A01 N 43/84; A01 N 43/86; A01 N 43/88; A01 N 61:00; A01 N 61:00; A01 N 61:00; A01 N 61:00; A01 N 61:00; A01 N 43/80; A01 N 43/713; A01 N 43/653; A01 N 43/54; A01 N 43/50

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
Draw Desc	Clip Img	Image								

☐ 70. Document ID: EP 1315420 A2 WO 200217719 A2 AU 200212180 A

L17: Entry 70 of 74

File: DWPI

Jun 4, 2003

DERWENT-ACC-NO: 2002-304209

DERWENT-WEEK: 200337

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TITLE: Synergistic herbicidal combination of tritosulfuron and other herbicides, e.g. propoxycarbazone or flucarbazone, especially useful for selective weed control in cereals or maize

INVENTOR: JAEGER, K; NUYKEN, W ; SCHMIDT, O ; WESTPHALEN, K ; ZAGAR, C

PRIORITY-DATA: 2000DE-1043121 (August 31, 2000)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1315420 A2	June 4, 2003	G	000	A01N047/36
WO 200217719 A2	March 7, 2002	G	037	A01N047/36
AU 200212180 A	March 13, 2002		000	A01N047/36

INT-CL (IPC): A01 N 37:20; A01 N 47/36; A01 N 37:38; A01 N 41:10; A01 N 43:56; A01 N 43:653; A01 N 43:90; A01 N 47/36; A01 N 47:36; A01 N 47:38

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
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**Search Results - Record(s) 71 through 74 of 74 returned.**☐ 71. Document ID: EP 1303189 A1 DE 10031825 A1 WO 200201957 A1 AU 200174108 A

L17: Entry 71 of 74

File: DWPI

Apr 23, 2003

DERWENT-ACC-NO: 2002-123372

DERWENT-WEEK: 200329

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TITLE: Synergistic herbicidal agents containing arylsulfonylaminocarbonyl-triazolinone derivatives

INVENTOR: DAHMEN, P; DREWES, M W ; FEUCHT, D ; KREMER, M ; MUELLER, K ; PONTZEN, R

PRIORITY-DATA: 2000DE-1031825 (June 30, 2000)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1303189 A1	April 23, 2003	G	000	A01N047/38
DE 10031825 A1	January 10, 2002		012	A01N047/38
WO 200201957 A1	January 10, 2002	G	000	A01N047/38
AU 200174108 A	January 14, 2002		000	A01N047/38

INT-CL (IPC): A01 N 25/32; A01 N 37/32; A01 N 43/76; A01 N 43/824; A01 N 43/90; A01 N 47/34; A01 N 47/38; A01 N 47:38; A01 N 47:34; A01 N 47/38; A01 N 43:90; A01 N 43:824; A01 N 43:76; A01 N 37:32; A01 N 25:32

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
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☐ 72. Document ID: DE 19947918 A1 EP 1221844 A2 WO 200124633 A2 AU 200077812 A

L17: Entry 72 of 74

File: DWPI

Apr 12, 2001

DERWENT-ACC-NO: 2001-357085

DERWENT-WEEK: 200254

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TITLE: Synergistic herbicidal composition useful for selective weed control in crops, especially cereals, containing bis-pyrimidinyl-oxy-benzoic acid derivative, another herbicide, e.g. acetochlor, and optionally safener

INVENTOR: FEUCHT, D; FUERSCH, H ; KREMER, M ; WELLMANN, A

PRIORITY-DATA: 1999DE-1047918 (October 6, 1999)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 19947918 A1	April 12, 2001		016	A01N043/54
EP 1221844 A2	July 17, 2002	G	000	A01N043/00
WO 200124633 A2	April 12, 2001	G	000	A01N043/00
AU 200077812 A	May 10, 2001		000	A01N043/00

INT-CL (IPC): A01 N 43/00; A01 N 43/54

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">KMC</a>
<a href="#">Draw Desc</a>	<a href="#">Clip Img</a>	<a href="#">Image</a>								

☐ 73. Document ID: WO 200008936 A1 AU 9957321 A DE 19919993 A1 BR 9913638 A EP 1104243 A1 CZ 200100558 A3 SK 200100211 A3 CN 1312682 A ZA 200101143 A MX 2001001651 A1 HU 200104049 A2 US 20020094934 A1 JP 2002522458 W

L17: Entry 73 of 74

File: DWPI

Feb 24, 2000

DERWENT-ACC-NO: 2000-224122

DERWENT-WEEK: 200264

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TITLE: Control of weeds in tolerant maize crops uses herbicidal combination containing glufosinate, glyphosate, imidazolinone, azole, cyclohexanedione or heteroaryloxyphenoxypyronic acid herbicide

INVENTOR: BIERINGER, H; HACKER, E ; WILLMS, L

PRIORITY-DATA: 1999DE-1019993 (April 30, 1999), 1998DE-1036737 (August 13, 1998), 2001ZA-0001143 (February 9, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200008936 A1	February 24, 2000	G	069	A01N057/20
AU 9957321 A	March 6, 2000		000	A01N057/20
DE 19919993 A1	November 2, 2000		000	A01N057/20
BR 9913638 A	May 22, 2001		000	A01N057/20
EP 1104243 A1	June 6, 2001	G	000	A01N057/20
CZ 200100558 A3	June 13, 2001		000	A01N057/20
SK 200100211 A3	August 6, 2001		000	A01N057/20
CN 1312682 A	September 12, 2001		000	A01N057/20
ZA 200101143 A	January 30, 2002		083	A01N000/00
MX 2001001651 A1	June 1, 2001		000	A01N033/18
HU 200104049 A2	April 29, 2002		000	A01N057/20
US 20020094934 A1	July 18, 2002		000	A01N057/00
JP 2002522458 W	July 23, 2002		072	A01N057/20

INT-CL (IPC): A01 N 0/00; A01 N 33/18; A01 N 33:18; A01 N 35/06; A01 N 37/22; A01 N 37/34; A01 N 37/40; A01 N 39/04; A01 N 41/10; A01 N 43/08; A01 N 43/10; A01 N 43/40; A01 N 43/50; A01 N 43/58; A01 N 43/653; A01 N 43/70; A01 N 43/707; A01 N 43/80; A01 N 43/824; A01 N 43/84; A01 N 43/90; A01 N 47/06; A01 N 47/30; A01 N 47/34; A01 N 47/36; A01 N 57/00; A01 N 57/20; A01 N 33:18; A01 N 37:22; A01 N 37:40; A01 N 39:04; A01 N 41:10; A01 N 43:10; A01 N 43:40; A01 N 43:50; A01 N 43:70; A01 N 43:80; A01 N 43:824; A01 N 43:90; A01 N 47:06; A01 N 47:36; A01 N 57/20; A01 N 37:22; A01 N 37:40; A01 N 39:04; A01 N 41:10; A01 N 43:10; A01 N 43:40; A01 N 43:50; A01 N 43:70; A01 N 43:80; A01 N 43:824; A01 N 43:90; A01 N 47:06; A01 N 47:36; A01 N 57/20; A01 N 43:40; A01 N 43:50; A01 N 43:70; A01 N 43:80; A01 N 43:824; A01 N 43:90; A01 N

47:06; A01 N 47:36; A01 N 57/20; A01 N 33:18; A01 N 37:22; A01 N 37:40; A01 N 39:04;  
A01 N 41:10; A01 N 43:10; A01 N 43:40; A01 N 43:50; A01 N 43:70; A01 N 43:80; A01 N  
43:824; A01 N 43:90; A01 N 47:06; A01 N 47:36; A01 N 57/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 74. Document ID: GB 2340396 A US 6211118 B1 FR 2782247 A1 DE 19937815 A1 AU  
9943501 A JP 2000063216 A CA 2280064 A1 GB 2340396 B

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File: DWPI

Feb 23, 2000

DERWENT-ACC-NO: 2000-138999

DERWENT-WEEK: 200120

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TITLE: Herbicidal composition comprises a 2-chloro-4-fluoro-5-(4-methyl-5-trifluo-  
romethyl-3-pyridazinon-2-yl)phenyl(1-5C) non-cyclic hydrocarbyl ether, and at least  
one other herbicidal compound

INVENTOR: HOSHI, H

PRIORITY-DATA: 1998JP-0227986 (August 12, 1998)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
GB 2340396 A	February 23, 2000		022	A01N043/58
US 6211118 B1	April 3, 2001		000	A01N043/64
FR 2782247 A1	February 18, 2000		000	A01N043/58
DE 19937815 A1	March 2, 2000		000	A01N043/58
AU 9943501 A	March 9, 2000		000	A01N041/10
JP 2000063216 A	February 29, 2000		005	A01N043/58
CA 2280064 A1	February 12, 2000	E	000	A01N043/58
GB 2340396 B	August 16, 2000		000	A01N043/58

INT-CL (IPC): A01 N 41/10; A01 N 43/54; A01 N 43/58; A01 N 43/64; A01 N 43/653; A01  
N 43/66; A01 N 43/90; A01 N 47/28; A01 N 47/36; A01 N 43/58; A01 N 47:36; A01 N  
47:38

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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File: USPT

Dec 10, 2002

DOCUMENT-IDENTIFIER: US 6492301 B1

TITLE: Herbicidal compositions with substituted phenylsulfonylureas for controlling weeds in rice

Abstract Text (1):

Herbicidal compositions comprising A) at least one herbicidally active compound from the group of the substituted phenylsulfonylureas of the formula I and their agriculturally accepted, i.e. acceptable and compatible, salts ##STR1## in which R.sup.1 is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C.sub.1 -C.sub.2)-alkoxy; R.sup.2 is I or CH.sub.2 NHO.sub.2 CH.sub.3 ; R.sup.3 is methyl or methoxy; and Z is N or CH; and B) at least one herbicidally active compound from the group of the compounds consisting of Ba) herbicides which are selective in rice, mainly against grasses, Bb) herbicides which are selective in rice, mainly against dicotyledonous harmful plants and cyperaceae, Bc) herbicides which are selective in rice, mainly against cyperaceae, and Bd) herbicides which are selective in rice, mainly against grasses and dicotyledonous harmful plants and also against harmful cyperaceae plants.

Brief Summary Text (3):

and/or their salts, which are highly suitable for controlling weeds in rice which have hitherto been difficult to control with individual herbicides, in particular grass-like, dicotyledonous and/or cyperaceae-like weeds in rice or transgenic crops of rice.

Brief Summary Text (9):

D1 discloses iodinated arylsulfonylureas of the formula I and salts thereof, ##STR3##

Brief Summary Text (12):

D2 discloses phenylsulfonylureas of the formula 2 and salts thereof ##STR4##

Brief Summary Text (21):

D4 discloses combinations comprising: A) at least one compound from the group of the substituted phenylsulfonylureas of the formula 4 and their agriculturally accepted salts ##STR7## in which R.sup.1 is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C.sub.1 -C.sub.2)-alkoxy and B) at least one herbicidally active compound from the group of the compounds consisting of Ba) herbicides which are selective in cereals against grasses, Bb) herbicides which are selective in cereals against dicotyledonous plants, Bc) herbicides which are selective in cereals against grasses and dicotyledonous plants and Bd) herbicides which are nonselective in non-crop land or in perennial crops (plantations) and/or selective in transgenic crops against wheat grasses and broad-leaved weeds.

Brief Summary Text (27):

Surprisingly, it has been found that these objects, inter alia, are achieved by herbicidal compositions having the features of claim 1. Accordingly, the invention provides herbicidal compositions, comprising A) at least one herbicidally active compound from the group of the substituted phenylsulfonylureas of the formula I and their agriculturally accepted, i.e. acceptable and compatible, salts ##STR8## in

which R<sup>sup.1</sup> is (C<sup>sub.1</sup> -C<sup>sub.8</sup>)-alkyl, (C<sup>sub.3</sup> -C<sup>sub.4</sup>)-alkenyl, (C<sup>sub.3</sup> -C<sup>sub.4</sup>)-alkynyl or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C<sup>sub.1</sup> -C<sup>sub.2</sup>)-alkoxy; R<sup>sup.2</sup> is I or CH<sub>sub.2</sub> NHO<sub>sub.2</sub> CH<sub>sub.3</sub>; R<sup>sup.3</sup> is methyl or methoxy; and Z is N or CH; and B) at least one herbicidally active compound from the group of the compounds consisting of Ba) herbicides which are selective in rice, mainly against grasses, Bb) herbicides which are selective in rice, mainly against dicotyledonous harmful plants and cyperaceae, Bc) herbicides which are selective in rice, mainly against cyperaceae, and Bd) herbicides which are selective in rice, mainly against grasses and dicotyledonous harmful plants and also against harmful cyperaceae plants, with the proviso that i) compositions comprising A') at least one compound from the group of the substituted phenylsulfonylureas of the formula I' and their agriculturally accepted salts ##STR9## in which R<sup>sup.1</sup> is (C<sup>sub.1</sup> -C<sup>sub.8</sup>)-alkyl, (C<sup>sub.3</sup> -C<sup>sub.4</sup>)-alkenyl, (C<sup>sub.3</sup> -C<sup>sub.4</sup>)-alkynyl or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, which is mono- to tetrasubstituted by radicals from group consisting of halogen and (C<sup>sub.1</sup> -C<sup>sub.2</sup>)-alkoxy, in combination with B') fenoxaprop, pendimethalin, nicosulfuron, mecoprop, MCPA, 2,4-D, dicamba, acifluorfen, azoles of the formula III ##STR10## in which R<sup>sup.1</sup> is (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, R<sup>sup.2</sup> is (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkylthio or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkoxy, each radical of which may be substituted by one or more halogen atoms, or R<sup>sup.1</sup> and R<sup>sup.2</sup> together form the group (CH<sub>sub.2</sub>)<sub>sub.m</sub> where m=3 or 4, R<sup>sup.3</sup> is hydrogen or halogen, R<sup>sup.4</sup> is hydrogen or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, R<sup>sup.5</sup> is hydrogen, nitro, cyano or one of the groups --COOR<sup>sup.7</sup>, --C(.dbd.X)NR<sup>sup.7</sup> R<sup>sup.8</sup> or --C(.dbd.X)R<sup>sup.10</sup>, R<sup>sup.6</sup> is hydrogen, halogen, cyano, (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkylthio or --NR<sup>sup.11</sup> R<sup>sup.12</sup>,

#### Brief Summary Text (28):

R<sup>sup.7</sup> and R<sup>sup.8</sup> are identical or different and are hydrogen or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, or R<sup>sup.7</sup> and R<sup>sup.8</sup> together with the nitrogen to which they are attached form a saturated 5- or 6-membered carbocyclic ring, R<sup>sup.10</sup> is hydrogen or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, where the latter may be unsubstituted or substituted by one or more halogen atoms, and R<sup>sup.11</sup> and R<sup>sup.12</sup> are identical or different and are hydrogen, (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkoxycarbonyl, where R<sup>sup.11</sup> and R<sup>sup.12</sup> together with the nitrogen to which they are attached may form a 3-, 5- or 6-membered carbocyclic or aromatic ring in which one carbon atom may optionally be replaced by an oxygen atom, bentazon, metsulfuron, triasulfuron, ioxynil, acetochlor, metolachlor, oxyfluorfen or KIH-2023, as the only herbicidally active compounds and ii) compositions which comprise A") at least one compound from the group of the substituted phenylsulfonylureas of the formula I" and their agriculturally accepted salts ##STR11## in which R<sup>sup.1</sup> is (C<sup>sub.1</sup> -C<sup>sub.8</sup>)-alkyl, (C<sup>sub.3</sup> -C<sup>sub.4</sup>)-alkenyl, (C<sup>sub.3</sup> -C<sup>sub.4</sup>)-alkynyl or (C<sup>sub.1</sup> -C<sup>sub.4</sup>)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C<sup>sub.1</sup> -C<sup>sub.2</sup>)-alkoxy in combination with B") fenoxaprop, pendimethalin, mecoprop, MCPA, 2,4-D, dicamba, a compound of the abovementioned formula III, bentazon, triasulfuron, ioxynil, metosulam, oxyfluorfen or metsulfuron as the only herbicidally active compounds, are excluded.

#### Brief Summary Text (35):

The compounds of type A (formula I) can form salts in which the hydrogen of the --SO<sub>sub.2</sub> --NH-- group is replaced by an agriculturally suitable cation. These salts are, for example, metal salts, in particular alkali metal salts (for example Na or K salts) or alkaline earth metal salts, or else ammonium salts or salts with organic amines. Salt formation can also be achieved by adding a strong acid to the heterocycle moiety of the compounds of the formula I. Acids which are suitable for this purpose are, for example, HCl, HNO<sub>sub.3</sub>, trichloroacetic acid, acetic acid or palmitic acid.

#### Brief Summary Text (36):

Particularly advantageous type A compounds are those in which the salt of the herbicide of the formula (I) is formed by replacing the hydrogen of the --SO<sub>sub.2</sub> --NH-- group by a cation from the group of the alkali metals, alkaline earth metals and ammonium, preferably sodium.

#### Brief Summary Text (39):

In principle, the phenylsulfonylureas of the formula I which carry iodine



substituents in the 4-position of the phenyl ring are included, for example, in the formula 1 from WO 92/13845, and their suitability as synergism partners for herbicides to be used in cereals or maize is likewise already part of the prior art (cf. D3); however, their excellent suitability for use as combination partners for synergistic mixtures with other herbicides, which are used in rice, is not disclosed in the prior art. In particular, there are no indications in the published literature that combinations of compounds of group Aa), i.e. the relatively limited and clearly defined group of the 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-ureidosulfonyl]benzoates, which are optionally present in the form of their salts, with rice herbicides have such an exceptional rank in the control of the most important harmful plants in rice crops. Here, it also has to be taken into consideration, in particular, that using a combination in crops of maize or cereals does not allow an extrapolation to the effect in crops of rice. Even if the compounds of group Aa) on their own are suitable for controlling harmful plants and rice, it is not possible to predict with a good or even some chance of success whether combinations with other rice herbicides permit, in the control of harmful plants, activity increases which exceed the additive activity.

Brief Summary Text (40):

Combination partners of type A which are of great interest for the combinations of the invention are compounds or their salts of group Aa) in which in the formula I R.sup.1 is methyl, ethyl, n- or isopropyl, n-, tert-, 2-butyl or isobutyl, n-pentyl, isopentyl, n-hexyl, isohexyl, 1,3-dimethylbutyl, n-heptyl, 1-methylhexyl or 1,4-dimethylpentyl, R.sup.2 is iodine, R.sup.3 is methyl and Z is N.

Brief Summary Text (41):

In a particularly preferred embodiment, the herbicidal compositions according to the invention comprise a type A compound from group Aa) of the formula I or their salt, where R.sup.1 is methyl, R.sup.2 is iodine, R.sup.3 is methyl and Z is N.

Brief Summary Text (43):

A combination partner which, in certain cases, is even more advantageous is the sodium salt of the compound A1) which is to be referred to as A1\*). ##STR13##

Brief Summary Text (46):

Of particular interest for the combinations of the invention are, as combination partners of type A compounds of the general formula I from group Ab) or their salts in which R.sup.1 is methyl, ethyl, n- or isopropyl, n-, tert-, 2-butyl or isobutyl, n-pentyl, isopentyl, n-hexyl, isohexyl, 1,3-dimethylbutyl, n-heptyl, 1-methylhexyl or 1,4-dimethylpentyl, R.sup.2 is CH.sub.2 NHSO.sub.2 CH.sub.3, R.sup.3 is methoxy and Z is CH.

Brief Summary Text (47):

In a very particularly preferred embodiment, the herbicidal compositions according to the invention comprise a type A compound from group Ab) of the general formula I or a salt thereof in which R.sup.1 is methyl, R.sup.2 is CH.sub.2 NHSO.sub.2 CH.sub.3, R.sup.3 is OCH.sub.3 and Z is CH.

Brief Summary Text (86):

In another preferred embodiment of the invention, the herbicidally active combinations comprise, as herbicides of type B, one or more herbicides which are selective in rice, mainly against grasses and dicotyledonous plants/cyperaceae, from the group consisting of B43) pendimethalin ##STR62##

N-(1-ethylpropyl)-2,6-dinitro-3,4-xylidine Pesticide Manual, 10th Ed. 1994, pp.779-780 ##STR63## 2-[(2-chlorophenyl)methyl]-4,4-dimethyl-3-isoxazolidinone; Pesticide Manual, 10th Ed. 1994, pp.220-221 ##STR64##

2-[[4-(2,4-dichloro-3-methylbenzoyl)-1,3-dimethyl-1H-pyrazol-5-yl]oxy]-1-(4-methylphenyl)acetophenone Pesticide Manual, 10th Ed. 1994, pp.92-93, ##STR65## (2,4-dichlorophenyl)

[1,3-dimethyl-5-[[4-(methylphenyl)sulfonyl]oxy]-1H-pyrazol-4-yl]methanone Pesticide Manual, 10th Ed. 1994, pp.870-871, ##STR66##

2-[[4-(2,4-dichlorobenzoyl)-1,3-dimethyl-1H-pyrazol-5-yl]oxy]-1-phenylethan one Pesticide Manual, 10th Ed. 1994, pp.874-875, ##STR67## sodium

2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]-benzoate, preference is given to the

sodium salt form Pesticide Manual, 10th Ed. 1994, p.620, ##STR68## methyl 2-(4,6-dimethoxy-2-pyrimidinyl-6-(1-methoxyiminoethyl)benzoate, also as acid or sodium salt Pesticide Manual, 11th Ed. 1997, pp.1071-1072, ##STR69## 5-tert-butyl-3-(2,4-dichloro-5-isopropoxyphenyl)-1,3,4-oxadiazol-2(3H)-one, Pesticide Manual, 11th Ed. 1997, pp.905-907, ##STR70## 5-tert-butyl-3-[2,4-dichloro-5-(prop-2-ynyl-1-phenyl)-1,3,4-oxadiazol-2(3H)-one, Pesticide Manual, 11th Ed. 1997, pp.904-905, ##STR71## 2-chloro-N-ethoxymethyl-6-ethylaceto-o-toluidide, Pesticide Manual, 11th Ed. 1997, pp.10-12, ##STR72## 2-chloro-6'-ethyl-N-(2-methoxy-1-methylethyl)aceto-o-toluidide, Pesticide Manual, 11th Ed. 1997, pp.833-834, ##STR73## 2',6'-dichloro-5,7-dimethoxy-3-methyl[1,2,4]triazolo[1,5-a]pyrimidine-2-sulfonyl anilide Pesticide Manual, 11th Ed. 1997, pp.836-838, ##STR74## 2-chloro-.alpha.,.alpha.,.alpha.-trifluoro-p-tolyl 3-ethoxy-4-nitro-phenyl ether, Pesticide Manual, 11th Ed. 1997, pp.919-921, and B56) dalapon

#### Brief Summary Text (113):

In a very particularly preferred embodiment according to the invention, the herbicidal compositions according to the invention comprise a synergistically effective amount of a combination of the compounds of the formula I or their salts (type A compounds) with compounds from group B. Here, it has to be particularly emphasized that even in combinations with application rates or ratios by weight of A:B in which a synergism cannot in all cases be detected without any problems--for example because the individual compounds are usually employed in the combination at very different application rates or because the control of the harmful plants by the individual compounds is already very good--the herbicidal compositions of the invention usually have an inherent synergistic action.

#### Brief Summary Text (119):

The ratios by weight of A:B of the combined herbicides can, as already mentioned, vary within wide limits, like their application rates. A range of the ratios of the application rates (wt/wt) according to the invention includes, for example, A:B from 1:20,000 to about 200:1. In the context of the invention, preference is given to compositions which comprise compounds of the formula I or their salts (type A compounds) and compounds from group B in a weight ratio of about 1:8000 to 100:1. Very particularly advantageous are compositions having ratios of application rates of A:B which are between 1:4000 and 50:1. In particular, for the various subgroups, the following picture results, i.e. the following ratios by weight are preferably used:

#### Brief Summary Text (122):

Preferred herbicidal compositions of the invention have, in a synergistically effective amount, A) at least one herbicidally active compound from the group of the substituted phenylsulfonylureas of the formula I and their agriculturally accepted, i.e. acceptable and compatible, salts ##STR92## in which R<sup>sup.1</sup> is (C<sub>sub.1</sub>-C<sub>sub.8</sub>)-alkyl, (C<sub>3-1</sub>-C<sub>sub.4</sub>)-alkenyl, (C<sub>3-1</sub>-C<sub>sub.4</sub>)-alkynyl or (C<sub>sub.1</sub>-C<sub>sub.4</sub>)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C<sub>sub.1</sub>-C<sub>sub.2</sub>)-alkoxy; R<sup>sup.2</sup> is I or CH<sub>sub.2</sub> NHO<sub>sub.2</sub> CH<sub>sub.3</sub>; R<sup>sup.3</sup> is methyl or methoxy; and Z is N or CH;

#### Brief Summary Text (136):

The herbicide combinations of the invention are prepared particularly advantageously by formulating the compounds of the formula I or salts thereof (type A compounds) with one or more compounds of type B similar to a conventional crop protection formulation from the group consisting of water-soluble wettable powders (WP), water-dispersible granules (WDG), water-emulsifiable granules (WEG), suspensions (SE) and oil suspension concentrates (SC).

#### Brief Summary Text (138):

Emulsifiable concentrates are prepared by dissolving the active compound or active compounds in an organic solvent, for example butanol, cyclohexanone, dimethylformamide, xylene, or else higher-boiling aromatics or hydrocarbons with the addition of one or more ionic and/or nonionic surfactants (emulsifiers). Examples of emulsifiers which can be used are: calcium salts of alkylarylsulfonic acids, such as calcium dodecylbenzenesulfonate, or nonionic emulsifiers such as fatty acid polyglycol esters, alkylaryl polyglycol ethers, fatty alcohol polyglycol ethers,

propylene oxide/ethylene oxide condensates (for example block copolymers), alkyl polyethers, sorbitan fatty acid esters, polyoxyethylene sorbitan fatty acid esters or other polyoxyethylene sorbitan esters.

Brief Summary Text (147):

or the salts of the abovementioned compounds.

Brief Summary Text (165):

In a very particularly preferred embodiment according to the invention, the herbicidal compositions of the invention additionally comprise C) one or more isoxazolin(s) of the formula C3 and salts thereof ##STR96## in which R.sup.1 is carboxyl, formyl or another acyl radical or a derivative of the three last-mentioned groups, R.sup.2 is hydrogen, halogen, C.sub.1 -C.sub.18 -alkyl, C.sub.3 -C.sub.8 -cycloalkyl, C.sub.2 -C.sub.8 -alkenyl, C.sub.2 -C.sub.8 -alkynyl, C.sub.1 -C.sub.18 -alkenyloxy, C.sub.2 -C.sub.8 -alkynyloxy, C.sub.1 -C.sub.18 -alkylthio, C.sub.2 -C.sub.8 -alkenylthio, where each of the nine last-mentioned radicals is in each case unsubstituted or substituted by one or more radicals from the group consisting of halogen, nitro, cyano, C.sub.1 -C.sub.4 -alkoxy or (C.sub.1 -C.sub.8 -alkoxy) carbonyl, or (C.sub.1 -C.sub.8 -alkoxy) carbonyl, R.sub.3 and R.sub.4 independently of one another are an aliphatic, araliphatic or heteroaraliphatic radical having 1 to 30 carbon atoms which is unsubstituted or substituted by one or more functional groups, or is an aromatic or heteroaromatic radical which is unsubstituted or substituted.

Brief Summary Text (188):

In a preferred variant of the method, the compounds of the formula (I) or salts thereof (type A compounds) are applied at application rates of from 0.1 to 100 g of ai/ha, preferably from 0.5 to 60 g of ai/ha, very particularly preferably between 2 and 40 g of ai/ha, while the application rates for the compounds of type B are from 1 to 5000 g of ai/ha. Preference is given to applying the active compounds of types A and B simultaneously or at different times at a weight ratio of 1:20,000 to 200:1. Furthermore, particular preference is given to the joint application of the active compounds in the form of tank mixtures, the optimally formulated concentrated formulations of the individual active compounds being mixed together in the tank with water and the resulting spray liquor being applied.

Brief Summary Text (200):

Overall, the invention thus also relates to the use of herbicidal compositions comprising A) at least one herbicidally active compound from the group of the substituted phenylsulfonylureas of the formula I and their agriculturally accepted, i.e. acceptable and compatible, salts ##STR102## in which R.sup.1 is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and/or (C.sub.1 -C.sub.2)-alkoxy; R.sup.2 is I or CH.sub.2 NHSO.sub.2 CH.sub.3 ; R.sup.3 is methyl or methoxy; and Z is N or CH;

Brief Summary Text (202):

in a weight ratio of compounds of the formula I or salts thereof (type A compounds) and compounds from group B in the range from 1:20,000 to 200:1, preferably 1:8000 to 100:1, particularly preferably 1:4000 to 50:1, for controlling undesirable harmful plants in crops of rice.

Brief Summary Text (233):

In summary, it may be stated that superadditive (synergistic) effects are achieved when sulfonylureas of the formula I and/or their salts are used together with one or more active compounds from group B. The activity in the combinations is more pronounced than that of the individual products used employed alone.

Brief Summary Paragraph Equation (1):

CH.sub.3 CCl.sub.2 CO.sub.2 H 2,2-dichloropropionic acid, preferably also in its use form as sodium salt, i.e. as dalapon-sodium Pesticide Manual, 11th Ed. 1997, pp.331-333.

Detailed Description Paragraph Table (1):

TABLE 1 Active g of CUMDI ORYSW compound(s) ai/ha % control % damage A1\*) 1.25 60 15

2.5 80 15 C3-1) 15 0 0 30 0 0 60 0 0 A1\*) + C3-1) 1.25 + 15 84 (60 + 0) 0 2.5 + 30  
 85 (80 + 0) 0 CUMDI = Cucumis dipsaceus ORYSW = Oryza sativa (paddy rice) A1\*) =  
 Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = AEF  
 115008 C3-1) = ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate ( ) = % activity of  
 the individual active compounds

#### Detailed Description Paragraph Table (2):

TABLE 2 Active g of ECHCO ELEIN ORYSW\*.sup.) compound(s) ai/ha % control % damage  
 A1\*) 1.25 0 0 10 2.5 35 0 25 5 37 0 25 B63a) 45 0 0 10 60 0 0 10 A1\*) + B63a) 1.25 +  
 45 82 (0 + 0) 90 (0 + 0) 15 (10 + 10) 2.5 + 45 88 (35 + 0) 90 (0 + 0) 13 (25 + 10)  
 ECHCG = Echinochloa crusgalli ELEIN = Eleusine indica ORYSW = Oryza sativa A1\*) =  
 Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]-benzoate B63a) =  
 Ethoxysulfuron ( ) = % activity of the individual active compounds Field trial:  
 Treatment at the 1-2 leaf stage rice, 2-3 leaf stage weed grasses Evaluation: 28  
 days after application \*.sup.) Regional acceptance level .ltoreq. 30% damage  
 (Latinamerica)

#### Detailed Description Paragraph Table (3):

TABLE 2a Active g of LEFFI ORYSW\*.sup.) compound(s) ai/ha % control % damage A1\*)  
 1.25 0 10 2.5 73 25 5 72 25 B63a) 45 0 10 60 0 10 A1\*) + B63a) 1.25 + 45 90 (0 + 0)  
 15 (10 + 10) 2.5 + 45 90 (73 + 0) 13 (25 + 10) LEFFI = Leptochloa filiformis ORYSW =  
 Oryza sativa A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]-benzoate B63a) =  
 Ethoxysulfuron ( ) = % activity of the individual active compounds Field trial:  
 Treatment at the 1-2 leaf stage rice, 2-3 leaf stage weed grasses Evaluation: 28  
 days after application \*.sup.) Regional acceptance level .ltoreq. 30% damage  
 (Latinamerica)

#### Detailed Description Paragraph Table (4):

TABLE 3 Active g of CYPIR ORYSW compound(s) ai/ha % control % damage A1\*) 0.75 40 0  
 1.5 67 0 2.5 87 0 B63a) 22.5 60 0 45 95 0 A1\*) + B63a) 0.75 + 22.5 95 (40 + 0) {E =  
 76} 0 1.5 + 22.5 96 (67 + 60) {E = 87} 0 CYPIR = Cyperus irria ORYSW = Oryza sativa  
 A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]-benzoate B63a) =  
 Ethoxysulfuron ( ) = % activity of the individual active compounds {E= } = Expected  
 value, calculated according to Colby Field trial: Treatment at the 4-5 leaf stage  
 (seed rice) 2 leaf stage weed grasses Evaluation: 28 days after application Field  
 trial: Treatment at the 4-5 leaf stage (seed rice) 2 leaf stage weed grasses  
 Evaluation: 28 days after application

#### Detailed Description Paragraph Table (5):

TABLE 4 Active g of ECHCG ORYSW\*.sup.) compound(s) ai/ha % control % damage A1\*)  
 1.25 0 0 2.5 0 0 5 0 1 B20) 10 0 0 20 0 0 A1\*) + B20) 1.25 + 20 73 (0 + 0) 14 2.5 +  
 10 43 (0 + 0) 1 2.5 + 20 68 (0 + 0) 15 ECHCG = Echinochloa crusgalli ORYSW = Oryza  
 sativa A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]-benzoate B20) =  
 fenoxaprop-P-ethyl ( ) = % activity of the individual active compounds \*.sup.) Field  
 trial: Regional acceptance level = 15% (Southeast Asia)

#### Detailed Description Paragraph Table (6):

TABLE 5 Active g of ECHCG ORYSW compound(s) ai/ha % control % damage A1\*) 1.25 0 0  
 2.5 0 0 5 9 1 B19) 250 30 2 500 40 10 A1\*) + B19) 1.25 + 250 50 (0 + 0) 2 2.5 + 500  
 83 (50 + 0) 13 ECHCG = Echinochloa crusgalli ORYSW = Oryza sativa A1\*) = Sodium salt  
 of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]-benzoate  
 B19) = anilofos ( ) = % activity of the individual active compounds Field trial:  
 Treatment at the 2-4 leaf stage rice, evaluation after 28 days

#### Detailed Description Paragraph Table (7):

TABLE 6 Active g of ECHCG ORYSW compound(s) ai/ha % control % damage A1\*) 2 10 0 B1)  
 300 81 0 600 89 0 A1\*) + B1) 2 + 300 87 {83} 0 2 + 600 93 {90} 0 ECHCG = Echinochloa  
 crusgalli ORYSW = Oryza sativa A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate B1) =  
 butachlor ( ) = % activity of the individual active compounds { } = Expected value,

calculated according to Colby's method Field trial: Treatment at the 1-2 leaf stage, evaluation 28 days after the application.

Detailed Description Paragraph Table (8):

TABLE 7 Active g of ECHCG MASCR ORYSW compound(s) ai/ha % control % control % damage A1\*) 2 10 33 0 B7) 1000 79 0 0 2000 88 0 0 A1\*) + B7) 2 + 1000 90 (79 + 10) 83 (33 + 0) 0 2 + 2000 95 {90} 84 (33 + 0) 0 ECHCG = Echinochloa crusgalli MASCR = Marsilea crenata ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate B7) = propanil ( ) = % activity of the individual active compounds { } = Expected value calculated according to Colby's method Field trial: Treatment at the 1-2 leaf stage, evaluation 28 days after the application.

Detailed Description Paragraph Table (9):

TABLE 8 Active g of ECHCG ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 40 10 3 60 10 B7) 1250 0 0 2500 0 0 5000 10 0 A1\*) + B7) 1.5 + 2500 65 (40 + 0) 12 1.5 + 5000 75 (40 + 10) 14 3 + 1250 70 (60 + 0) 11 ECHCG = Echinochloa crusgalli ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate B7) = propanil ( ) = % activity of the individual active compounds Greenhouse trial: Treatment at the 1-2 leaf stage, evaluation 22 days after the application.

Detailed Description Paragraph Table (10):

TABLE 9 Active g of ECHCG ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 40 10 3 60 10 B48) 19 15 0 38 30 0 75 40 5 A1\*) + B48) 1.5 + 38 85 (40 + 30) 10 3 + 19 75 {66} 11 ECHCG = Echinochloa crusgalli ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate B22) = KIH 2023 = bispyribuc ( ) = % activity of the individual active compounds { } = expected value, calculated according to Colbys method Greenhouse trial: Treatment at the 1-2 leaf stage, evaluation 22 days after the application.

Detailed Description Paragraph Table (11):

TABLE 10 Active g of SCIJU ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 40 10 3 40 10 B58) 7.5 35 0 15 40 0 30 55 2 60 60 5 B59) 7.5 50 0 15 55 0 30 60 2 A1\*) + B58) 3 + 7.5 85 (40 + 35) 8 1.5 + 30 97 (40 + 55) 12 A1\*) + B59) 3 + 7.5 93 {70} 8 1.5 + 15 96 {73} 10 SCIJU = Scirpus juncooides ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B58) = bensulfuron B59) = pyrazosulfuron { } = expected value according to Colby ( ) = % activity of the individual active compounds Greenhouse trial: Treatment at the 1-2 leaf stage, evaluation 20 days after application.

Detailed Description Paragraph Table (12):

TABLE 11 Active g of ECHCG ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 40 10 3 60 10 B61) 8 0 0 15 25 0 30 50 0 60 60 0 A1\*) + B61) 1.5 + 8 76 (40 + 0) 9 1.5 + 15 83 (40 + 25) 10 1.5 + 60 96 {76} 12 3 + 30 93 {80} 8 ECHCG = Echinochloa crusgalli ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B61) = imazosulfuron ( ) = % activity of the individual active compounds { } = expected value according to the Colby method Greenhouse trial: Treatment at the 1-2 leaf stage, evaluation 20 days after the application.

Detailed Description Paragraph Table (13):

TABLE 12 Active g of CYPSE ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 10 10 3 30 10 B60) 15 0 0 30 15 0 60 15 5 A1\*) + B60) 1.5 + 60 63 (10 + 15) 10 3 + 15 65 (30 + 0) 12 CYPSE = Cyperus serotinus ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B60) = cinosulfuron ( ) = % activity of the individual active compounds Greenhouse trial: Treatment at the 1-2 leaf stage, evaluation 20 days after the application.

Detailed Description Paragraph Table (14):

TABLE 13 Active g of SAGPY ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 30 10 3 50 10 B17) 50 0 0 100 40 0 200 80 0 A1\*) + B17) 1.5 + 100 85 (30 + 40) 11 3 + 50 65 (50 + 0) 9 SAGPY = Sagittaria pygmaea ORYSW = Oryza sativa A1\*) = Sodium salt of

methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B17) = fentrazainide ( ) = % activity of the individual active compounds Greenhouse trial: Treatment at the 5-6 leaf stage, evaluation 20 days after the application.

Detailed Description Paragraph Table (15):

TABLE 14 Active g of SAGPY ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 30 10 3 50 10 B73) 50 10 0 100 15 0 200 20 5 B13) 250 30 0 500 30 0 1000 30 0 B4) 125 65 15 250 70 15 500 75 35 A1\*) + B73) 1.5 + 200 75 (30 + 20) 10 3 + 50 85 (50 + 10) 11 A1\*) + B13) 1.5 + 1000 75 (30 + 30) 10 3 + 250 85 (50 + 30) 11 A1\*) + B4) 1.5 + 500 93 {83} 10 3 + 125 97 {75} 11 SAGPY = Sagittaria pygmaea ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B73) = MY 100 B13) = quinchlorac B4) = pretilachlor ( ) = % activity of the individual active compounds { } = expected value according to Colby Greenhouse trial: Treatment at the 3-4 leaf stage, evaluation 21 days after the application.

Detailed Description Paragraph Table (16):

TABLE 15 Active g of SCIMA ORYSW compound(s) ai/ha % control % damage A1\*) 1.25 35 5 2.5 40 10 5 45 10 B64) 5 78 3 9 80 8 18 83 10 37 85 10 A1\*) + B64) 1.25 + 5 90 {86} 11 1.25 + 37 95 {90} 15 2.5 + 37 93 {89} 14 5 + 5 90 {88} 12 SCIMA = Scirpus maritimus ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B64) = azimsulfuron ( ) = % activity of the individual active compounds { } = expected value according to Colby Greenhouse trial: Treatment at the 2-3 leaf stage, evaluation 20 days after the application.

Detailed Description Paragraph Table (17):

TABLE 16 Active g of CYPSE ORYSW compound(s) ai/ha % control % damage A1\*) 1.25 10 5 2.5 30 10 5 50 10 B72) 18.75 25 3 37.5 35 8 75 60 8 A1\*) + B72) 1.25 + 75 80 (10 + 60) 13 2.5 + 18.75 75 (30 + 25) 12 CYPSE = Cyperus serotinus ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B72) = LGC40863 = pyribenzoxime ( ) = % activity of the individual active compounds Greenhouse trial: Treatment at the 2-3 leaf stage, evaluation 20 days after the application.

Detailed Description Paragraph Table (18):

TABLE 17 Active g of ECHCG ORYSW compound(s) ai/ha % control % damage A1\*) 1 5 7 2 25 12 4 45 18 B51) 25 37 0 50 63 3 100 63 6 200 80 10 B38) 7.5 50 0 15 52 0 30 52 0 A1\*) + B51) 2 + 25 75 (25 + 37) 8 1 + 200 88 {81} 14 A1\*) + B38) 2 + 75 85 (25 + 50) 12 1 + 30 75 (5 + 52) 6 ECHCG = Echinochloa crusgalli ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B51) = oxadiargyl B38) = carfentrazone ( ) = % activity of the individual active compounds { } = expected value according to the Colby method Field trial: Treatment at the 2 leaf stage, evaluation 14 days after the application.

Detailed Description Paragraph Table (19):

TABLE 18 Active g of ECHCG ORYSW compound(s) ai/ha % control % damage A1\*) 1 5 7 2 25 12 B63a) 5 7 7 10 7 7 B20) 30 75 0 C3-1) 30 A1\*) + B63a) 1 + 5 33 (5 + 7) A1\*) + B63a) + 1 + 5 + 98 B20) + C3-1) 30 + 30 (5 + 7 + 75) ECHCG = Echinochloa crusgalli ORYSW = Oryza sativa A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B63a) = ethoxysulfuron B20) = fenoxaprop-P C3-1) = ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate ( ) = % activity of the individual active compounds Field trial: Treatment at the 1-2 leaf stage, evaluation 14 days after the application.

Detailed Description Paragraph Table (20):

TABLE 19 Active g of CYPSE ORYSW compound(s) ai/ha % control % damage A1\*) 1.5 10 8 3 30 12 B70) 150 50 0 450 65 0 B33b) 100 40 6 200 50 8 400 80 12 A1\*) + B70) 3 + 150 85 (30 + 50) 10 1.5 + 450 80 (10 + 65) 8 A1\*) + B33) 3 + 100 85 (30 + 40) 14 1.5 + 200 80 (10 + 50) 10 CYPSE = Cyperus serotinus ORYSW = Oryza sativa A1\*) = Sodium salt of methyl

4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate =  
 iodofururon B70) = KP314 (pentoxazone) B33b) = azole of the formula B33b) ( ) = %  
 activity of the individual active compounds Field trial: Treatment at the 2 leaf  
 stage, evaluation 14 days after the application.

Detailed Description Paragraph Table (21):

TABLE 20 Active g of IPOHE ORYSW compound(s) ai/ha % control % damage A1\*) 2.5 30 8  
 B40) 420 65 20 B11) 3300 43 3 B10) 4480 55 0 A1\*) + B40) 2.5 + 420 85 {75} 18 A1\*) +  
 B11) 2.5 + 3300 75 {60} 5 A1\*) + B10) 2.5 + 4480 100 (30 + 55) 7 IPOHE = Ipomoea  
 hederacea ORYSW = Oryza sativa A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate =  
 iodofururon B40) = triclopyr B11) = thiobencarb as trade product .TM. Bolero B10) =  
 molinate as trade product .TM. Ordram ( ) = % activity of the individual active  
 compounds { } = expected value according to Colby Field trial: Treatment at the 4-6  
 leaf stage, evaluation 28 days after the application.

Detailed Description Paragraph Table (22):

TABLE 21 Active g of CYPSE ORYSW compound(s) ai/ha % control % damage A1\*) 2.5 25 8  
 B12) 600 65 3 B9) 3000 45 5 B24) 60 60 6 B71) 150 55 4 A1\*) + B12) 2.5 + 600 93 (25  
 + 65) 9 A1\*) + B9) 2.5 + 3000 83 (25 + 45) 8 A1\*) + B24) 2.5 + 60 88 {70} 6 A1\*) +  
 B71) 2.5 + 150 87 {66} 7 CYPSE = Cyperus serotinus ORYSW = Oryza sativa A1\*) =  
 Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate =  
 iodofururon B12) = pyributicarb B9) = dimepiperate B24) = dithiopyr B71) =  
 indanofan ( ) = % activity of the individual active compounds { } = expected value  
 according to Colby Field trial: Treatment at the 2 leaf stage, evaluation 28 days  
 after the application.

Detailed Description Paragraph Table (23):

TABLE 22 Active g of SAGPY ORYSW compound(s) ai/ha % control % damage A1\*) 2.5 20 6  
 5 40 12 B5) 600 0 0 1200 0 3 2400 0 10 A1\*) + B5) 2.5 + 2400 55 (20 + 0) 8 5 + 600  
 65 (40 + 0) 10 SAGPY = Sagittaria pygmaea ORYSW = Oryza sativa A1\*) = Sodium salt of  
 methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate =  
 iodofururon B5) = mefenacet ( ) = % activity of the individual active compounds Field  
 trial: Treatment: 1-2 leaf stage, evaluation 28 days after the application.

Detailed Description Paragraph Table (24):

TABLE 23 Active g of CYPIR ORYSW compound(s) ai/ha % control % damage A1\*) 0.62 53 3  
 1.25 85 8 2.5 98 12 B39) 250 42 0 400 78 0 800 97 3 A1\*) + B39) 0.62 + 250 99 (53 +  
 42) 0 CYPIR = Cyperus iria ORYSW = Oryza sativa A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate =  
 iodofururon B39) = bentazone ( ) = % activity of the individual active compounds  
 Field trial: Treatment: 4-6 leaf stage, evaluation 36 days after the application.

Detailed Description Paragraph Table (25):

TABLE 24 Active g of CYPIR ORYSW compound(s) ai/ha % control % damage A1\*) 2.5 17 0  
 5 27 0 B44) 400 30 0 A1\*) + B44) 2.5 + 400 67 (17 + 30) 0 5 + 400 78 (27 + 30) 0  
 CYPIR = Cyperus iria ORYSW = Oryza sativa A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate =  
 iodofururon B44) = clomazone ( ) = % activity of the individual active compounds  
 Field trial: Treatment by pre-emergence method, evaluation 53 days after the  
 application.

Detailed Description Paragraph Table (26):

TABLE 25 Active g of POLCO ORYSW compound(s) ai/ha % control % damage A1\*) 1.25 35 6  
 2.5 80 12 B31) 240 45 8 480 80 10 A1\*) + B31) 1.25 + 240 84 (35 + 45) 11 POLCO =  
 Polygonum convolvulus ORYSW = Oryza sativa A1\*) = Sodium salt of methyl  
 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate =  
 iodofururon B31) = dicamba ( ) = % activity of the individual active compounds  
 Field trial: Treatment at the 3 leaf stage, evaluation 33 days after the  
 application.

Detailed Description Paragraph Table (27):

TABLE 26 Active g of COMBE ORYSW compound(s) ai/ha % control % damage A1\*) 2.5 47 0  
 5 67 0 B57) 1 20 0 2 68 0 A1\*) + B57) 2.5 + 1 73 (47 + 20) 0 COMBE = Commelina

benghalensis ORYSW = *Oryza sativa* A1\*) = Sodium salt of methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate = iodosulfuron B57) = metsulfuron ( ) = % activity of the individual active compounds  
Field trial: Treatment at the 3 leaf state, evaluation 33 days after the application.

## CLAIMS:

1. A herbicidal composition, comprising a synergistic combination of A) at least one synergistically herbicidally active compound from the group of the substituted phenylsulfonylureas of the formula I and their agriculturally accepted, i.e., acceptable and compatible, salts ##STR104## in which R<sup>sup.1</sup> is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C.sub.1 -C.sub.2)-alkoxy; R<sup>sup.2</sup> is I R<sup>sup.3</sup> is methyl or methoxy; and Z is N and B) at least one synergistically herbicidally active compound from the group of the compounds consisting of Ba) herbicides which are selective in rice, mainly against grasses, comprising ##STR105## ##STR106## in which R<sup>sup.1</sup> is halogen, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl, --NO.sub.2, --CN or S(O).sub.n R<sup>sup.10</sup> ; R<sup>sup.2</sup> and R<sup>sup.3</sup> independently of one another are hydrogen, halogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-haloalkoxy, (C.sub.1 -C.sub.4)-haloalkyl, --NO.sub.2, --CN or S(O).sub.m R<sup>sup.11</sup> --NR<sup>sup.12</sup> R<sup>sup.12</sup>, --NR<sup>sup.14</sup> --CO--R<sup>sup.15</sup> ; R<sup>sup.4</sup> is hydrogen, (C.sub.1 -C.sub.4)-alkyl or --CO--O--(C.sub.1 -C.sub.4)-alkyl; R<sup>sup.5</sup>, R<sup>sup.6</sup>, R<sup>sup.7</sup>, R<sup>sup.8</sup>, R<sup>sup.9</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl or --CO--R<sup>sup.16</sup> ; R<sup>sup.10</sup> is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl or (C.sub.1 -C.sub.4)-alkoxy; R<sup>sup.11</sup> is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl, phenyl, benzyl or --NR<sup>sup.17</sup> R<sup>sup.18</sup> ; R<sup>sup.12</sup> and R<sup>sup.13</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.14</sup> is hydrogen or (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.15</sup> is (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.16</sup> is hydrogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl or (C.sub.1 -C.sub.4)-alkoxy; R<sup>sup.17</sup> and R<sup>sup.18</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl; and n and m independently of one another are 0, 1 or 2, ##STR107## ##STR108## Bb) herbicides which are selective in rice, mainly against dicotyledonous harmful plants and cyperaceae, comprising ##STR109## in which R<sup>sup.1</sup> is (C.sub.1 -C.sub.4)-alkyl, R<sup>sup.2</sup> is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkylthio or (C.sub.1 -C.sub.4)-alkoxy, each radical of which may be substituted by one or more halogen atoms, or R<sup>sup.1</sup> and R<sup>sup.2</sup> together form the group (CH.sub.2).sub.m where m=3 or 4, R<sup>sup.3</sup> is hydrogen or halogen, R<sup>sup.4</sup> is hydrogen or (C.sub.1 -C.sub.4)-alkyl, R<sup>sup.5</sup> is hydrogen, nitro, cyano or one of the groups --COOR<sup>sup.7</sup>, --C(=X)NR<sup>sup.7</sup> R<sup>sup.8</sup> or --C(=X)R<sup>sup.10</sup>, R<sup>sup.6</sup> is hydrogen, halogen, cyano, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkylthio or --NR<sup>sup.11</sup> R<sup>sup.12</sup>, R<sup>sup.7</sup> and R<sup>sup.8</sup> are identical or different and are hydrogen or (C.sub.1 -C.sub.4)-alkyl, or R<sup>sup.7</sup> and R<sup>sup.8</sup> together with the nitrogen to which they are attached form a saturated 5- or 6-membered carbocyclic ring, R<sup>sup.10</sup> is hydrogen or (C.sub.1 -C.sub.4)-alkyl, where the latter may be unsubstituted or substituted by one or more halogen atoms, and R<sup>sup.11</sup> and R<sup>sup.12</sup> are identical or different and are hydrogen, (C.sub.1 -C.sub.4)-alkyl or (C.sub.1 -C.sub.4)-alkoxycarbonyl, where R<sup>sup.11</sup> and R<sup>sup.12</sup> together with the nitrogen to which they are attached may form a 3-, 5- or 6-membered carbocyclic or aromatic ring in which one carbon atom may optionally be replaced by an oxygen atom, ##STR110## Bc) herbicides which are selective in rice, mainly against cyperaceae, comprising ##STR111## Bd) herbicides which are selective in rice, mainly against grasses and dicotyledonous harmful plants and also against harmful cyperaceae plants, comprising ##STR112## ##STR113## ##STR114## in which a) R<sup>sup.1</sup> is ethoxy, propoxy or isopropoxy and R<sup>sup.2</sup> is halogen, NO.sub.2, CF.sub.3, CN, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkylthio or ((C.sub.1 -C.sub.4)-alkoxy)carbonyl and n is 0, 1, 2 or 3 or b) R<sup>sup.1</sup> is saturated or unsaturated (C.sub.1 -C.sub.8)-alkoxy, which is substituted by halogen, saturated or unsaturated (C.sub.1 -C.sub.6)-alkoxy, a radical of the formula ((C.sub.1 -C.sub.6)-alkyl)-S--, ((C.sub.1 -C.sub.6)-alkyl)-SO--, ((C.sub.1 -C.sub.6)-alkyl)-SO.sub.2 --, ((C.sub.1 -C.sub.6)-alkyl)-O--CO--, NO.sub.2, CN or phenyl; furthermore (C.sub.2 -C.sub.8)-alkenyloxy or -alkynyloxy and R<sup>sup.2</sup> is saturated or unsaturated (C.sub.1 -C.sub.8)-alkyl, phenyl, phenoxy, (C.sub.1



-C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkylthio, ((C.sub.1 -C.sub.4)-alkoxy)carbonyl, where all of the abovementioned radicals R.sup.2 may be substituted by halogen, (C.sub.1 -C.sub.4)-alkoxy or (C.sub.1 -C.sub.4)-alkylthio, or halogen, NO.sub.2, (C.sub.1 -C.sub.4)-alkylsulfonyl or -sulfinyl and n is 0, 1, 2 or 3 or c) R.sup.1 is (C.sub.1 -C.sub.8)-alkoxy and R.sup.2 is (C.sub.2 -C.sub.8)-alkenyl or -alkynyl, phenyl, phenoxy, where the radicals mentioned above for R.sup.2 are unsubstituted or substituted by halogen, (C.sub.1 -C.sub.4)-alkoxy or (C.sub.1 -C.sub.4)-alkylthio, or (C.sub.1 -C.sub.4)-alkylsulfonyl or -sulfinyl and n is 1, 2 or 3 or d) R.sup.1 is, in each case in the 2-position on the phenyl radical, halogen, methoxy, ethyl or propyl, R.sup.2 is ((C.sub.1 -C.sub.4)-alkoxy)carbonyl in the 6-position on the phenyl radical and n =1 and in all cases a) to d) R.sup.3 is hydrogen, saturated or unsaturated (C.sub.1 -C.sub.8)-alkyl or (C.sub.1 -C.sub.4)-alkoxy, R.sup.4, R.sup.5 independently of one another are hydrogen, halogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkylthio, where the three last-mentioned radicals are unsubstituted or substituted by halogen, (C.sub.1 -C.sub.4)-alkoxy or (C.sub.1 -C.sub.4)-alkylthio, Y is O or S and E is CH or N, ##STR115## ##STR116## with the proviso that i) compositions comprising A') at least one compound from the group of the substituted phenylsulfonylureas of the formula I' and their agriculturally accepted salts ##STR117## in which R.sup.1 is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals from group consisting of halogen and (C.sub.1 -C.sub.2)-alkoxy, in combination with B') fenoxaprop, pendimethalin, nicosulfuron, mecoprop, MCPA, 2,4-D, dicamba, acifluorfen, azoles of the formula III ##STR118## in which R.sup.1 is (C.sub.1 -C.sub.4)-alkyl, R.sup.2 is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkylthio or (C.sub.1 -C.sub.4)-alkoxy, each radical of which may be substituted by one or more halogen atoms, or R.sup.1 and R.sup.2 together form the group (CH.sub.2).sub.m where m=3 or 4, R.sup.3 is hydrogen or halogen, R.sup.4 is hydrogen or (C.sub.1 -C.sub.4)-alkyl, R.sup.5 is hydrogen, nitro, cyano or one of the groups --COOR.sup.7, --C(=X)NR.sup.7 R.sup.8 or --C(=X)R.sup.10, R.sup.6 is hydrogen, halogen, cyano, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkylthio or --NR.sup.11 R.sup.12, R.sup.7 and R.sup.8 are identical or different and are hydrogen or (C.sub.1 -C.sub.4)-alkyl, or R.sup.7 and R.sup.8 together with the nitrogen to which they are attached form a saturated 5- or 6-membered carbocyclic ring, R.sup.10 is hydrogen or (C.sub.1 -C.sub.4)-alkyl, where the latter may be unsubstituted or substituted by one or more halogen atoms, and R.sup.11 R.sup.12 are identical or different and are hydrogen, (C.sub.1 -C.sub.4)-alkyl or (C.sub.1 -C.sub.4)-alkoxycarbonyl, where R.sup.11 and R.sup.12 together with the nitrogen to which they are attached may form a 3-, 5- or 6-membered carbocyclic or aromatic ring in which one carbon atom may optionally be replaced by an oxygen atom, bentazon, metsulfuron, ioxynil, acetochlor, metolachlor, or KIH-2023, as the only herbicidally active compounds are excluded.

2. The composition as claimed in claim 1, wherein, in the herbicide of the formula (I) or its salt R.sup.1 is methyl, ethyl, n- or isopropyl, n-, tert-, 2-butyl or isobutyl, n-pentyl, isopentyl, n-hexyl, isohexyl, 1,3-dimethylbutyl, n-heptyl, 1-methylhexyl or 1,4-dimethylpentyl; R.sup.2 is I; R.sup.3 is methyl; and z is N.

3. The composition as claimed in claim 1, wherein, in the herbicide of the formula (I) or its salt R.sup.1 is methyl.

4. The composition as claimed in claim 1, wherein, the composition comprises the compound A1) methyl 4-iodo-2-[3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl]benzoate ##STR119## and/or the sodium salt of A1\*).

5. The composition as claimed in claim 1, wherein the salt of the herbicide of the formula (I) is formed by replacing the hydrogen of the SO.sub.2 --NH-group by a cation from the group of the alkali metals, alkaline earth metals and ammonium.

13. The composition as claimed in claim 1 wherein, the composition comprises the compounds of the formula I or their salts (group A compounds) and the compounds from group B in a weight ratio of from 1:20,000 to 200:1 to 50:1.

15. The composition as claimed in claim 1, wherein the composition comprises the

compound of formula (I) or their salts and the compounds from group B in a weight of from 1:8000 to 100:1.

16. The composition as claimed in claim 1, wherein the composition comprises the compounds of formula (I) or their salts and the compounds from group B in a weight ratio of from 1:4000 to 50:1.

20. The herbicidal composition of claim 1, wherein the herbicidally active compound from the group of the substituted phenylsulfonylurea of the formula (I) is sodium salt of methyl 4-iodo-2-(3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)ureidosulfonyl) benzoate and the herbicidal compound of the group B) is ethoxysulfuron.

21. A herbicidal composition, comprising a synergistic amount of B) at least one herbicidally active compound from the group of the substituted phenylsulfonylureas of the formula I and their agriculturally accepted, i.e. acceptable and compatible, salts ##STR135## in which R<sup>sup.1</sup> is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals from the group consisting of halogen and (C.sub.1 -C.sub.2)-alkoxy; R<sup>sup.2</sup> is I R<sup>sup.3</sup> is methyl or methoxy; and Z is N in combination with at least one herbicidally active compound from the group of the compounds B' consisting of B1) butachlor, B2) butenachlor, B3) thenylchlor, B4) pretilachlor, B5) mefenacet, B5a) Bay FOE 5043, B6) naproanilid, B7) propanil, B8) etobenzanid, B9) dimepiperate, B10) molinate, B11) thiobencarb, B12) pyributicarb, B13) quinclorac, B14a) sulcotrione, B15) cycloxydim B16) sethoxydim B17) NBA 061, B18) piperophos, B19) anilofos, B21) haloxyfop, B22) cyhalofop, B23) JC-940, B24) dithiopyr, B25) bromobutide, B26) cinmethylin, B27) CH-900, B32) acifluorfen, B34) chlorimuron, B37) picloram, B38) carfentrazone B40) triclopyr, B41) benfuresate, B42) daimuron, B44) clomazon, B45) benzofenap, B46) pyrazolynate, B47) pyrazoxyfen, B49) KIH 6127, B50) oxadiazon, B51) oxadiargyl, B56) dalapon, B58) bensulfuron, B59) pyrazosulfuron, B60) cinosulfuron, B61) imazosulfuron, B62) AC 322,140 (Cyclosulfamuron), B63a) ethoxysulfuron (HOE 095404), B64) azimsulfuron (DPX-A8947), B66) prometryn, B67) simetryn, B68) thiazopyr, B69) pyrazophos, B70) pentoxazone, B71) indanofan, B72) LGC 40863 and B73) MY 100 or in combination with two or more herbicidally active compounds from the group of the compounds B" consisting of B1) butachlor, B2) butenachlor, B3) thenylchlor, B4) pretilachlor, B5) mefenacet, B5a) Bay FOE 5043, B6) naproanilid, B7) propanil, B8) etobenzanid, B9) dimepiperate, B10) molinate, B11) thiobencarb, B12) pyributicarb, B13) quinclorac, B14a) sulcotrione, B15) cycloxydim B16) sethoxydim B17) NBA 061, B18) piperophos, B19) anilofos, B20) fenbaxaprop, fenoxaprop-P, B21) haloxyfop, B22) cyhalofop, B23) JC-940, B24) dithiopyr, B25) bromobutide, B26) cinmethylin, B27) CH-900, B28) 2,4-D, B29) mecoprop, mecoprop-P, B30) MCPA, B31) dicamba, B32) acifluorfen, ##STR136## B34) chlorimuron, B35) triasulfuron, B36) ioxynil, B37) picloram, B38) carfentrazone, B39) bentazon, B40) triclopyr, B41) benfuresate, B42) daimuron, B43) pendimethalin, B44) clomazon, B45) benzofenap, B46) pyrazolynate, B47) pyrazoxyfen, B48) KIH 2023, B49) KIH 6127, B50) oxadiazon, B51) oxadiargyl, B52) acetochlor, B53) metolachlor, B54) metosulam, B55) oxyfluorfen B56) dalapon, B57) metsulfuron, B58) bensulfuron, B59) pyrazosulfuron, B60) cinosulfuron, B61) imazosulfuron, B62) AC 322,140 (cyclosulfamuron), B63a) ethoxysulfuron (HOE 095404), B64) azimsulfuron (DPX-A8947), B65) nicosulfuron, B66) prometryn, B67) simetryn, B68) thiazopyr, B69) pyrazophos, B70) pentoxazone, B71) indanofan, B72) LGC 40863 and B73) MY 100 where in the case B" at least one of the compounds from the group B" also has to belong to group B'.

22. A process for rip-roaring a composition as claimed in claim 1, which comprises, formulating the compounds of the formula I or their salts (type A compounds) with one or more compounds of type B analogously to a customary crop protection formulation from the group consisting of wettable powders, emulsifiable concentrates, aqueous solutions, emulsions, sprayable solutions (tank mix), oil- or water-based dispersions, suspoemulsions, dusting agents, seed dressings, granules for soil application or application by broadcasting, water-dispersible granules, ULV formulations, microcapsules and waxes.

25. The method as claimed in claim 24, wherein, the application rate for the compounds of the formula I) or their salts (type A compounds) is from 0.1 to 100 g of ai/ha, preferably from 0.5 to 60 g of ai/ha, very particularly preferably from 2 to 40 g of ai/ha, and the application rates for the compounds of type B are from 1

to 5000 g of ai/ha.

30. A method for controlling undesirable harmful plants in rice crops which comprises applying to said harmful plants or to an area where they reside an effective amount of a herbicidal composition comprising A) at least one herbicidally active compound from the group of the substituted phenylsulfonyleureas of the formula I and their agriculturally accepted, salts ##STR137## in which R<sup>sup.1</sup> is (C.sub.1 -C.sub.8)-alkyl, (C.sub.3 -C.sub.4)-alkenyl, (C.sub.3 -C.sub.4)-alkynyl or (C.sub.1 -C.sub.4)-alkyl, which is mono- to tetrasubstituted by radicals selected from the group consisting of halogen and/or (C.sub.1 -C.sub.2)-alkoxy; R<sup>sup.2</sup> is I R<sup>sup.3</sup> is methyl or methoxy; and Z is N and B) at least one herbicidally active compound from the group of the compounds consisting of Ba) herbicides which are selective in rice against grasses selected from the group consisting of B1) butachlor, B2) butenachlor, B3) thenylchlor, B4) pretilachlor, B5) mefenacet, B5a) Bay FOE 5043, B6) naproanilid, B7) propanil, B8) etobenzanid, B9) dimepiperate, B10) molinate, B11) thiobencarb, B12) pyributicarb, B13) quinclorac, B14) cyclohexandiones of the formula II ##STR138## in which R<sup>sup.1</sup> is halogen, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl, --NO<sub>2</sub>, --CN or S(O)<sub>n</sub> R<sup>sup.10</sup>; R<sup>sup.2</sup> and R<sup>sup.3</sup> independently of one another are hydrogen, halogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-alkoxy, (C.sub.1 -C.sub.4)-haloalkoxy, (C.sub.1 -C.sub.4)-haloalkyl, --NO<sub>2</sub>, --CN or S(O)<sub>m</sub> R<sup>sup.11</sup>, --NR<sup>sup.12</sup> R<sup>sup.13</sup> --NR<sup>sup.14</sup> --CO--R<sup>sup.15</sup>; R<sup>sup.4</sup> is hydrogen, (C.sub.1 -C.sub.4)-alkyl or --CO--O--(C.sub.1 -C.sub.4)-alkyl; R<sup>sup.5</sup>, R<sup>sup.6</sup>, R<sup>sup.7</sup>, R<sup>sup.8</sup>, R<sup>sup.9</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl or --CO--R<sup>sup.16</sup>; R<sup>sup.10</sup> is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl or (C.sub.1 -C.sub.4)-alkoxy; R<sup>sup.11</sup> is (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl, phenyl, benzyl or --NR<sup>sup.17</sup> R<sup>sup.18</sup>; R<sup>sup.12</sup> and R<sup>sup.13</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.14</sup> is hydrogen or (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.15</sup> is (C.sub.1 -C.sub.4)-alkyl; R<sup>sup.16</sup> is hydrogen, (C.sub.1 -C.sub.4)-alkyl, (C.sub.1 -C.sub.4)-haloalkyl or (C.sub.1 -C.sub.4)-alkoxy; R<sup>sup.17</sup> and R<sup>sup.18</sup> independently of one another are hydrogen or (C.sub.1 -C.sub.4)-alkyl; and n and m independently of one another are 0, 1 or 2, B15) sethoxydim B16) NBA 061, B17) piperophos, B18) anilofos, B19) fenoxaprop, fenoxaprop-P, B20) haloxyfop, B21) cyhalofop, B22) JC-940, B23) dithiopyr, B24) bromobutide, B25) cinmethylin and B26) CH-900, Bb) herbicides which are selective in rice against dicotyledonous harmful plants and cyperaceae selected from the group consisting of B27) 2,4-D B28) mecoprop, mecoprop-P, B29) MCPA, B30) dicamba, B31) acifluorfen, B33a) ##STR139## B34) chlorimuron, B35) triasulfuron, B36) ioxynil, B37) picloram and B38) carfentrazone, Bc) herbicides which are selective in rice against cyperaceae selected from the group consisting of B39) bentazon, B40) triclopyr, B41) benfuresate and B42) daimuron, Bd) herbicides which are selective in rice against grasses and dicotyledonous harmful plants and harmful cyperaceae plants selected from the group consisting of B43) pendimethalin, B44) clomazon, B45) benzofenap, B46) pyrazolynate, B47) pyrazoxyfen, B48) KIH 2023, B49) KIH 6127, B50) oxadiazon, B51) oxadiargyl, B52) acetochlor, B53) metolachlor, B54) metosulam, B55) oxyfluorfen, B56) dalapon, B57) metsulfuron, B58) bensulfuron, B59) pyrazosulfuron, B60) cinosulfuron, B61) imazosulfuron, B62) AC 322,140 (Cyclosulfamuron), B63a) ethoxysulfuron (HOE 095404), B64) azimsulfuron (DPX-A8947), B65) nicosulfuron, B66) prometryn, B67) simetryn, B68) thiazopyr, B69) pyrazophos, B70) pentoxazone, B71) indanofan, B72) LGC 40863 and B73) MY 100, in a weight ratio A:B in the range from 1:20,000 to 200:1.

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May 1, 2001

DOCUMENT-IDENTIFIER: US 6225260 B1

TITLE: Quaternary ammonium salts of a sulfonylureaAbstract Text (1):

The present invention provides a compound comprising a quaternary ammonium salt of a sulfonylurea having the formula ##STR1##

Abstract Text (2):

wherein R.sup.1 is a substituted or unsubstituted phenyl, heterocyclic ring, or phenoxy, or --N(CH.sub.3)(SO.sub.2 CH.sub.3); R.sup.2 is H or CH.sub.3; R.sup.3 is a substituted or unsubstituted pyrimidine or a substituted or unsubstituted triazine; R.sup.4 and R.sup.5 are independently unsubstituted or hydroxy substituted linear or branched C.sub.1 -C.sub.4 alkyls, --(CH.sub.2 CH.sub.2 O).sub.m CH.sub.2 CH.sub.2 OH, or --(CH.sub.2 CHCH.sub.3 O).sub.m CH.sub.2 CHCH.sub.3 OH where m is 1 to 10; R.sup.6 is a substituted or unsubstituted benzyl, ethylbenzyl, naphthylmethyl, or linear or branched C.sub.1 -C.sub.22 alkyl; R.sup.7 is a substituted or unsubstituted, linear or branched C.sub.8 -C.sub.22 alkyl or --R.sup.13 (O).sub.n (C.sub.6 H.sub.5)R.sup.14 where n is 0 or 1; R.sup.13 is a substituted or unsubstituted C.sub.1 -C.sub.8 alkyl or C.sub.1 -C.sub.8 alkoxyalkyl; and R.sup.14 is a substituted or unsubstituted, linear or branched C.sub.1 -C.sub.12 alkyl. Also, a method of preparing a quaternary ammonium salt of a sulfonylurea is provided. The method comprises contacting a quaternary ammonium hydroxide and a sulfonylurea to form the quaternary ammonium salt of the sulfonylurea. The quaternary ammonium salts of a sulfonylurea are useful as herbicides, fungicides, and plant growth regulating agents.

Brief Summary Text (2):

This invention relates to quaternary ammonium salts of a sulfonylurea, methods for preparing quaternary ammonium salts of a sulfonylurea, and the use of such compounds as pesticides, herbicides, fungicides, and plant growth regulating agents.

Brief Summary Text (5):

There have been previous attempts to stabilize sulfonylureas in aqueous suspension compositions. For example, Sandell, U.S. Pat. No. 4,599,412, discloses a process for the preparation of solution formulations of sulfonylureas containing an agriculturally suitable cation, such as ammonium or substituted ammonium. Sandell also generally discloses that ammonium and quaternary ammonium salts of sulfonylureas can be prepared by treating the corresponding N-protonated sulfonylurea with an ammonium salt solution. Sandell notes, however, that these compounds are still susceptible to the degradative effects of moisture and impurities present in at least trace quantities in all practical solvent systems.

Brief Summary Text (6):

Hyson, U.S. Pat. No. 4,936,900, discloses compositions consisting essentially of a sulfonylurea and a carboxylic or an inorganic acid. No quaternary ammonium salts are disclosed.

Brief Summary Text (7):

Ort et al., U.S. Pat. No. 5,688,745, discloses salts of a sulfonylurea formed from bases, such as alkali metal carbonates, alkali metal hydroxides, alkaline earth metal hydroxides, ammonia, and ethanolamine, or acids, such as hydrochloric acid, nitric acid, trichloroacetic acid, acetic acid, and palmitic acid.

Brief Summary Text (8):

Schnabel et al., U.S. Pat. No. 5,696,053, is directed to a salt of a sulfonylurea containing a metal or ammonium ion.

Brief Summary Text (9):

Fory et al., PCT Publication No. WO 97/41112, discloses a salt of a sulfonylurea containing an alkali metal or alkaline earth metal atom.

Brief Summary Text (11):

Applicants have discovered quaternary ammonium salts of a sulfonylurea having high water solubility and high hydrolytic stability, and a method of preparing such compounds comprising contacting a quaternary ammonium hydroxide with a sulfonylurea to form the quaternary ammonium salt of a sulfonylurea.

Brief Summary Text (12):

Pesticidal, herbicidal, fungicidal, and plant growth regulating compositions comprising an effective amount of one or more of the quaternary ammonium salts of a sulfonylurea are a further embodiment of the present invention.

Brief Summary Text (13):

Still another embodiment is a method of controlling plants or fungi comprising applying an effective amount of one or more of the quaternary ammonium salts of a sulfonylurea of the present invention to the plants or fungi, the seeds of the plants, or the area on which the plants or fungi grow. Yet another embodiment is a method of regulating the growth of plants comprising applying an effective amount of one or more of the quaternary ammonium salts of a sulfonylurea of the present invention to the plants.

Drawing Description Text (2):

FIG. 1 are FT-IR spectra over the range 500 to 4,000 wavenumbers of benzethonium salt of nicosulfuron, nicosulfuron, and benzethonium chloride.

Drawing Description Text (3):

FIG. 2 is a graph of the ratios of the concentrations of benzethonium salt of nicosulfuron and nicosulfuron alone to their initial concentrations versus days in storage as determined by HPLC analysis.

Detailed Description Text (2):

The present invention encompasses quaternary ammonium salts of a sulfonylurea having the formula ##STR2##

Detailed Description Text (8):

Most desirably, the sulfonylurea is  
2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-N,N-dimethyl-3-pyridinecarboxamide (nicosulfuron);  
N-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3-(ethylsulfonyl)-2-pyridinesulfonamide (rimsulfuron); methyl  
2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate (metsulfuron-methyl); methyl  
2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)methylamino]carbonyl]amino]sulfonyl]benzoate (tribenuron-methyl);  
3-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]-2-thiophenecarboxylic (trifensulfuron-methyl);  
2-chloro-N-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]benzenesulfonamide (chlorsulfuron); methyl  
2-[[[(4-ethoxy-6-(methylamino)-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate (ethametsulfuron-methyl); methyl  
2-[[[[[4-(dimethylamino)-6-(2,2,2-trifluoroethoxy)-1,3,5-triazin-2-yl]amino]carbonyl]amino]sulfonyl]-3-methylbenzoate (triflusulfuron-methyl); ethyl  
2-[[[[[4-chloro-6-methoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]benzoate (chlorimuron ethyl); methyl  
2-[[[[[4,6-dimethyl-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]benzoate (sulfometuron-methyl);  
N-[[[(4,6-dimethoxypyrimidine-2-yl)amino]carbonyl]-1-methyl-4-(2-methyl-2H-

tetrazol-5-yl)-1H-pyrazole-5-sulfonamide (azimsulfuron); bensulfuron-methyl; or flupyralsulfuron-methyl. The foregoing compounds are available from DuPont Agricultural Products of Wilmington, Del. Other desirable sulfonylureas include, but are not limited to, amidosulfuron, iodosulfuron, and ethoxysulfuron available from Hoechst Schering Agrevo GmbH of Berlin, Germany; prosulfuron, oxasulfuron, primisulfuron, triasulfuron, and cinosulfuron available from Novartis Crop Protection AG of Basel, Switzerland; flazasulfuron available from Ishihara Sangyo of Kusatsu, Japan; halosulfuron available from Monsanto of St. Louis, Mo.; and imazosulfuron available from Takeda Chemical Industries of Osaka, Japan.

Detailed Description Text (11):

Alternatively, the quaternary ammonium salts of a sulfonylurea may have the formula ##STR5##

Detailed Description Text (13):

The quaternary ammonium salts of a sulfonylurea of the present invention are highly water soluble. For example, a 50% aqueous solution of benzethonium salts of nicosulfuron may be prepared.

Detailed Description Text (14):

Another embodiment of the invention is an herbicidal, fungicidal, and/or plant growth regulating agent concentrate comprising from about 0.1% to about 99%, preferably, 0.2% to 95%, by weight of one or more of the quaternary ammonium salts of a sulfonylurea of the present invention based upon 100% of total concentrate. Generally, the herbicidal concentrate further comprises from about 1% to about 99.9%, preferably from about 5% to about 99.8%, by weight of a solid or liquid formulation adjuvant and up to 25%, preferably from about 0.1% to 25%, by weight of one or more surfactants.

Detailed Description Text (16):

The composition may include additional herbicides, such as bromoxanil and acetochlor. Herbicides that may be used in the compositions with the quaternary ammonium salts of a sulfonylurea include partner herbicides, such as a hormonal, anticholine esterase, or glyphosate. Examples of hormonal herbicides include, but are not limited to, phenoxies, such as (2,4-dichlorophenoxy)acetic acid (2,4D) derivatives and 4-chloro-2-methylphenoxy acetic acid (MCPA). Examples of anticholine esterase herbicides include, but are not limited to, organophosphorous herbicides, such as anilofos.

Detailed Description Text (19):

The quaternary ammonium salt of a sulfonylurea may be incorporated into different formulations including, but not limited to, granules, pellets, tablets, wettable powders, wettable dusts, microencapsulated materials, impregnated materials, emulsifiable concentrates, flowable concentrates, soluble concentrates, and ready-to-use solutions. The concentrates, granules, pellets, tablets, dusts, and other materials may be diluted with a solvent, such as water, to form a use dilution of the quaternary ammonium salt of a sulfonylurea which may be used as a pesticide, fungicide, herbicide, and/or plant growth regulating agent. The solvent may be an organic solvent. Example of organic solvents include, but are not limited to, natural crop oils such as soybean oil, corn oil, cottonseed oil, sunflower oil and epoxidized or methylated derivatives thereof; propylene carbonate; triethyl phosphate; n-alkyl pyrrolidones; and crop oil esters, such as methylsoyate available from Henkel Corp. of Ambler, Pa., and acetates such as heptyl acetate and Exxates.RTM. available from Exxon Chemicals Co. of Houston, Tex.; and mixtures thereof. Hydrophobic oils such as diisodecyl adipate and C.sub.8 -C.sub.12 alcohols may be used for spreading in rice paddy applications.

Detailed Description Text (21):

Also, the invention includes a method of controlling plants or fungi comprising applying a solution of an effective amount of one or more of the quaternary ammonium salts of a sulfonylurea to the plants or fungi, the seeds of the plants, or the area on which the plants or fungi grow. The solution may also be applied to plants to regulate their growth.

Detailed Description Text (22):

Generally the quaternary ammonium salt of a sulfonyl urea is applied at a rate ranging from about 0.1 to about 1,000 g/ha (grams/hectare) to plants or fungi, the seeds of the plants, and/or the area on which the plants or fungi grow.

Detailed Description Text (23):

Quaternary ammonium salts of a sulfonylurea, including the quaternary ammonium salts of a sulfonylurea described above, may be prepared from a sulfonylurea and a quaternary ammonium hydroxide by mixing the sulfonylurea and the quaternary ammonium hydroxide. Broadly the molar ratio of the quaternary ammonium hydroxide to the sulfonylurea used in the reaction ranges from about 0.3 to about 3.0. Preferably, the molar ratio ranges from about 0.5 to about 1.5 and more preferably from about 0.8 to about 1.2. The mixing is for a period sufficient to effectively mix the quaternary ammonium hydroxide and the sulfonylurea. It will depend on the size of the mixing vessel and the amounts of the sulfonylurea and the quaternary ammonium hydroxide. Preferably, the mixing is effected at a temperature of from about -25 to about 125.degree. C., more preferably, at a temperature of from about 0 to about 50.degree. C.

Detailed Description Text (24):

The quaternary ammonium hydroxide may be prepared by methods known in the art, such as that disclosed in U.S. Pat. No. 5,399,762. One method is by mixing a quaternary ammonium halide, preferably the chloride, with an alkali metal hydroxide, preferably potassium hydroxide. The alkali metal hydroxide may be dissolved in a solvent such as water; an alcohol, such as methanol, ethanol, isopropanol, propylene glycol, ethylene glycol, and other polyols; and/or other polar organic solvents, such as acetonitrile, dimethylformamide, and alkyl ethers. Preferred solvents include, but are not limited to, methanol, ethanol, and isopropanol. For preparing solid sulfonylurea quaternary ammonium compounds, low molecular weight organic solvents are preferable. The mixing is for a time sufficient to effectively mix the quaternary ammonium salt and the alkali metal hydroxide. It will depend on the size of the mixing vessel and the amounts of the quaternary ammonium salt and the alkali metal hydroxide. The mixture may be filtered to remove any alkali metal halide which form during the preparation of the quaternary ammonium hydroxide.

Detailed Description Text (28):

Benzethonium salt of nicosulfuron was prepared as follows.

Detailed Description Text (29):

15.0 g. of potassium hydroxide (85%, 0.227 mol) were added to 75 g. of ethanol in a 500 ml reaction flask. The mixture was stirred until a clear and colorless solution was obtained. 100.0 g. of Hyamine 1622.TM. (benzethonium chloride, 0.223 mol) were added to the solution. The solution was stirred for 2 hours at room temperature. The resulting slurry was filtered through a filter funnel to remove potassium chloride salt. The salt cake formed on the filter funnel was rinsed with 25 ml of cold ethanol. The filtrates were combined. The concentration of the benzethonium hydroxide in the solution was determined to be 50.3% by titration with sodium lauryl sulfate.

Detailed Description Text (30):

39.6 g. (0.047 mol) of the quaternary ammonium hydroxide solution were placed in a 100 ml reaction flask. 20.4 g. of nicosulfuron (0.047 mol) were added to the reaction flask. The contents of the flask were stirred at room temperature for 15-30 minutes until a clear solution was obtained. After stirring, the reaction flask was cooled with an ice bath. The quaternary ammonium salts of the sulfonylurea in the solution solidified during cooling. The solvent was removed and the solid was dried under vacuum at room temperature to yield 39.58 g. of product. The product was a light yellow powder.

Detailed Description Text (31):

Elemental analysis on the benzethonium salt of nicosulfuron was performed. The benzethonium salt of nicosulfuron prepared contained 60.21% carbon, 7.23% hydrogen, 11.65% nitrogen, and 3.87% sulfur. Based on the molecular formula, the benzethonium salt of nicosulfuron contains 61.39% carbon, 7.19% hydrogen, 11.94% nitrogen, and 3.98% sulfur.

Detailed Description Text (32):

The melting point of the product was determined to be from about 60 to about 64.degree. C., compared to from about 141 to about 144.degree. C. for nicosulfuron. At room temperature, the water solubility of the quaternary ammonium salt of the sulfonylurea is over 50%, while the water solubility for nicosulfuron alone is only 1.2% at a pH of 7.

Detailed Description Text (33):

FT-IR spectra of the benzethonium salt of nicosulfuron, nicosulfuron, and benzethonium chloride over the range 500 to 4,000 wavenumbers were obtained. The results are shown in FIG. 1.

Detailed Description Text (34):

The hydrolytic stabilities of the benzethonium salt of nicosulfuron and its benzethonium salt were determined as follows. Aqueous solutions containing 100 ppm of nicosulfuron or its benzethonium salt were prepared with deionized water and stored at room temperature for 36 days. The solutions were analyzed by HPLC with an Inersil ODS2 column and an ultraviolet detector at a wavelength of 254 nm. The mobile phase through the column consisted of acetonitrile and water at a 1:1 volume ratio. The flow rate through the column was 1 ml/min. FIG. 2 shows the results of the HPLC analysis. The ratio of the concentration of each material after several days storage to the initial concentration of the material is directly proportional to the percentage of material which did not degrade during storage. After 36 days, only 7% of the nicosulfuron was present in the nicosulfuron solution while 92% of the benzethonium salt was present in the benzethonium salt solution.

Detailed Description Text (36):

Benzethonium salts of rimsulfuron and metsulfuron-methyl were prepared according to the general procedure described in Example 1.

Detailed Description Text (37):

Elemental analysis on the benzethonium salts were performed. The benzethonium salt of rimsulfuron prepared contained 57.10% carbon, 6.90% hydrogen, 9.51% nitrogen, and 7.33% sulfur. Based on the molecular formula, the benzethonium salt of rimsulfuron contains 58.41% carbon, 6.93% hydrogen, 9.97% nitrogen, and 7.61% sulfur. The benzethonium salt of metsulfuron-methyl prepared contained 61.43% carbon, 6.99% hydrogen, 10.20% nitrogen, and 4.01% sulfur. Based on the molecular formula, the benzethonium salt of metsulfuron-methyl contains 62.10% carbon, 7.12% hydrogen, 10.60% nitrogen, and 4.04% sulfur.

Detailed Description Text (39):

The minimum effective concentrations of the quaternary ammonium salts of the sulfonylureas of Examples 1 and 2 were determined against the fungi *Aspergillus niger* by the zone of inhibition assay method common in the art. *A. niger* ATCC #16404 was contacted with each sulfonylurea salt for 6 days in a Czapek solution agar. The results are shown in Table 1.

Detailed Description Text (41):

The herbicidal efficacy of the benzethonium salts of nicosulfuron and rimsulfuron prepared in Examples 1 and 2 were determined as follows.

Detailed Description Text (42):

Aqueous solutions of the benzethonium salts of each sulfonylurea were prepared with and without 0.25% by weight of the nonionic surfactant polyoxyethylene (20) monolaurate (Tween 20.RTM., trademark of ICI), based upon 100% total weight of aqueous solution. The aqueous solutions were sprayed onto giant foxtail (*Setaria faberi*) and large crabgrass (*Digitaria sanguinalis*) with a spray volume of 187 L/ha (liters/hectare). The active amount of each salt applied in grams/hectare (g/ha) is shown in Table 2 with respect to giant foxtail and Table 3 with respect to large crabgrass. The plants were evaluated two weeks after treatment with the aqueous solution by obtaining their green fresh weights and comparing these weights to an untreated control treatment to compute percent control values. Six replications were made of each treatment. All data were analyzed using a Fisher's Least Significant Difference (L.S.D.) Test at the 0.05 level. The results are shown in Tables 2 and 3.



Detailed Description Text (46):

The aqueous solutions of the benzethonium salts of each sulfonylurea were as effective as the 75 DF formulations of each sulfonylurea against *Setaria faberi*. The aqueous solutions of the benzethonium salts of each sulfonylurea without the Tween 20.RTM. were significantly more effective against *Digitaria sanguinalis* than the corresponding 75 DF formulations. The aqueous solutions of the benzethonium salts of each sulfonylurea with the Tween 20.RTM. were slightly more effective against *Digitaria sanguinalis* than the corresponding 75 DF formulations.

Detailed Description Text (48):

To 21.57 g

2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-N,N-dimethyl-3-pyridinecarboxamide and 50 mL 1.0 N NaOH in 1400 mL methylene chloride was incrementally added 22.37 g of diisobutylphenoxy ethoxyethyl dimethylbenzyl ammonium chloride (Hyamine 1622.TM.), with several small methylene chloride washes to facilitate transfer. The reaction medium was filtered through a bed of molecular sieves to remove mineral salts and water. Methylene chloride was stripped to recover the white powder. Upon aging for 1 week at 54.degree. C., 9% relative decomposition of the sulfonylurea resulted as measured by HPLC.

Detailed Description Text (52):

Tetradodecyl ammonium bromide was dissolved in 5 mL of CH<sub>2</sub>Cl<sub>2</sub> and stirred with 3.3 mL of 1 N NaOH. To this was added 1.27 g of N-[[[(4,6-dimethoxypyrimidine-2-yl)amino]carbonyl]-1-methyl-4-(2-methyl-2H-tetrazol-5-yl)-1H-pyrazole-5-sulfonamide (97.8%) dissolved in 5 mL of CH<sub>2</sub>Cl<sub>2</sub> and stirring continued for 5 min at 25.degree. C. The organic phase was separated, washed with water, dried and the solvent removed under vacuum in a rotary evaporator at a maximum of 50.degree. C. The resulting viscous, colorless oil gave an assay of 35% of the corresponding sulfonylurea quaternary salt (vs. 38% theory) using HPLC. This oil was more than 50% soluble in epoxidized soybean oil, methyl caprylate/caprate, and cottonseed oil. 50% solutions of the resultant sulfonylurea quaternary salt in these three solvents were aged 1 week at 54.degree. C., giving 20-45% relative degradation by HPLC analysis. The N-[[[(4,6-dimethoxypyrimidine-2-yl)amino]carbonyl]-1-methyl-4-(2-methyl-2H-tetrazol-5-yl)-1H-pyrazole-5-sulfonamide was practically insoluble in these three solvents.

Detailed Description Text (54):

In a vial was vortexed the following: 0.214 g methyl 2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]methyl benzoate (98.3%), 0.192 g of a 25% aqueous solution of tetramethyl ammonium hydroxide, and 4.32 g of water to produce the sulfonylurea quaternary salt. Upon aging the solution at 54.degree. C. for one week, 52% degradation of the sulfonylurea resulted as measured by HPLC.

Detailed Description Paragraph Table (1):

TABLE 1 Minimum Effective Concentration Sulfonylurea in Benzethonium salt (ppm)  
nicosulfuron 100-300 rimsulfuron 100-300 metsulfuron-methyl 300-1000

Detailed Description Paragraph Table (2):

TABLE 2 *Setaria faberi* (Giant Foxtail) Nonionic Surfactant % Herbicide Treatment (Percent by Weight) Control 3 g/ha Benzethonium salt of rimsulfuron None 25 6 g/ha Benzethonium salt of nicosulfuron None 39 3 g/ha Benzethonium salt of rimsulfuron 0.25% Tween 20 .RTM. 95 6 g/ha Benzethonium salt of nicosulfuron 0.25% Tween 20 .RTM. 97 L.S.D. (0.05) 12

Detailed Description Paragraph Table (3):

TABLE 3 *Digitaria sanguinalis* (Large Crabgrass) Nonionic Surfactant % Herbicide Treatment (Percent by Weight) Control 10 g/ha Benzethonium salt of rimsulfuron None 58 20 g/ha Benzethonium salt of nicosulfuron None 34 10 g/ha Benzethonium salt of rimsulfuron 0.25% Tween 20 .RTM. 94 20 g/ha Benzethonium salt of nicosulfuron 0.25% Tween 20 .RTM. 94 L.S.D. (0.05) 12

CLAIMS:

1. A quaternary ammonium salt of sulfonylurea having the formula ##STR6##

wherein R.sup.1 is a substituted or unsubstituted phenyl, heterocyclic ring, or phenoxy, or --N(CH.sub.3)(SO.sub.2 CH.sub.3); R.sup.2 is H or CH.sub.3; R.sup.3 is a substituted or unsubstituted pyrimidine or a substituted or unsubstituted triazine; R.sup.4 and R.sup.5 are independently unsubstituted or hydroxy substituted linear or branched C.sub.1 -C.sub.4 alkyls, --(CH.sub.2 CH.sub.2 O).sub.m CH.sub.2 CH.sub.2 OH, or --(CH.sub.2 CHCH.sub.3 O).sub.m CH.sub.2 CHCH.sub.3 OH where m is 1 to 10; R.sup.6 is a benzyl, ethylbenzyl, naphthylmethyl, or linear or branched C.sub.1 -C.sub.22 alkyl; R.sup.7 is --R.sup.13 (O).sub.n (C.sub.6 H.sub.5)R.sup.14 where n is 0 or 1; R.sup.13 is a C.sub.1 -C.sub.8 alkyl or C.sub.1 -C.sub.8 alkoxyalkyl; and R.sup.14 is a linear or branched C.sub.1 -C.sub.12 alkyl.

7. The compound of claim 1, wherein said sulfonylurea is selected from the group consisting of nicosulfuron, rimsulfuron, metsulfuron-methyl, tribenuron-methyl, triflurosulfuron-methyl, chlorsulfuron, ethametsulfuron methyl, triflurosulfuron methyl, chlorimuron ethyl, sulfometuron methyl, bensulfuron methyl, azimsulfuron, flupyrsulfuron methyl, amidosulfuron, iodosulfuron, ethoxysulfuron, prosulfuron, oxasulfuron, primisulfuron, triasulfuron, cinosulfuron, flazasulfuron, halosulfuron, and imazosulfuron.

12. A method of preparing a quaternary ammonium salt of sulfonylurea comprising contacting a quaternary ammonium hydroxide with a sulfonylurea to form said quaternary ammonium salt of sulfonylurea, wherein the quaternary ammonium hydroxide has the formula ##STR9##

R.sup.4 and R.sup.5 are independently unsubstituted or hydroxy substituted linear or branched C.sub.1 -C.sub.4 alkyls, --(CH.sub.2 CH.sub.2 O).sub.m CH.sub.2 CH.sub.2 OH or --(CH.sub.2 CHCH.sub.3 O).sub.m CH.sub.2 CHCH.sub.3 OH where m is 1 to 10; R.sup.6 is a benzyl, ethylbenzyl, naphthylmethyl, or linear or branched C.sub.1 -C.sub.22 alkyl; R.sup.7 is --R.sup.13 (O).sub.n (C.sub.6 H.sub.4)R.sup.14 where n is 0 or 1; R.sup.13 is a C.sub.1 -C.sub.8 alkyl or C.sub.1 -C.sub.8 alkoxyalkyl; and R.sup.14 is a linear or branched C.sub.1 -C.sub.12 alkyl.